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The Emu

A Quarterly Magazine to popularise the Study and Protection
of Native Birds.

OFFICIAL ORGAN OF THE AUSTRALASIAN ORNITHOLOGISTS' UNION.



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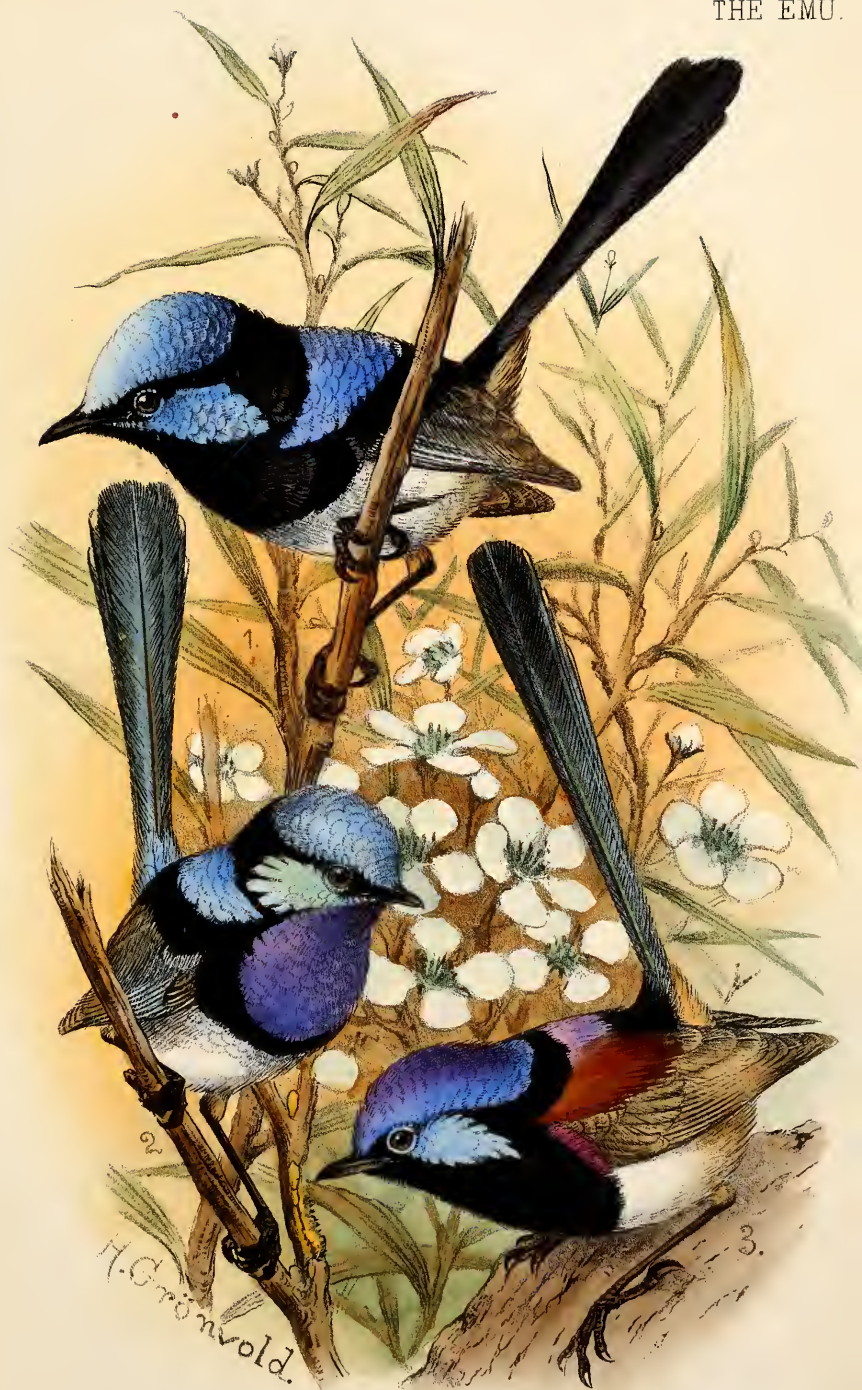
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H. Gronvold del. et lith.

Mintern Bros imp.

1. *Malurus elizabethæ*.

2. *M. whitei*.

3. *M. assimilis*.

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The Emu

Official Organ of the Australasian Ornithologists' Union.

"Birds of a feather."

VOL. II.]

1ST JULY, 1902.

[PART I.

Penguins.

BY CAPTAIN F. W. HUTTON, F.R.S., CHRISTCHURCH, N.Z.

THE name Penguin was originally given by Spanish sailors to the short-winged northern Auks and Divers from the quantity of fat found on them (*penguigo*); and on the discovery of the Southern Ocean the same name was employed for the somewhat similar birds found there. Subsequently the name was dropped for the northern birds and retained for the southern ones only.

Penguins are evidently adapted for an aquatic life. They have lost their power of flight by this adaptation, and not by degeneration. The feathers of the wings and body are reduced to small dimensions, almost like scales, which form a continuous covering all over the body; and the only tolerably long feathers with quills are in the tail, or form plumes on the head. There are no quill feathers in the wing.

Of all birds they are the most expert divers, using their wings for locomotion under water, and keeping their feet stretched out straight behind them. In fact, they fly through the water as other birds fly through the air; only as the bird is lighter than the water, the principal stroke of its wings must be directed upwards to keep it under the surface. For this purpose the muscles which give the up stroke to the wing are more developed than in other birds, with a consequent expansion of the scapula, to which some of these muscles are attached. As the wing is reduced to a flipper, the bones have also become modified, and are broader and flatter than in other birds; and the first digit has become fused to the second. These modifications turn the wing into a strong swimming paddle. So rapid is their flight under water that the Crested Penguins (*Catarrhactes*) and the Johnnies (*Pygoscelis*) spring out of the water, with their wings close to their sides, and take a long leap through the air like porpoises.

Penguins are the only birds which can swallow their food under water; but they have not developed any structural modification to enable them to do this. And it is only constant practice, not any special adaptation, which enables them to

remain under water longer than other birds. How long they can remain under water without coming up to breathe is not known. Sir John Murray, of the *Challenger* Expedition, says that a Crested Penguin placed in a basket and submerged was dead in a minute and a half. But this can hardly be taken as a fair test.

Another peculiarity in the skeleton of the Penguins is that the three metatarsal bones of the leg are very short, and separated by deep grooves throughout their whole length, the grooves generally penetrating completely through the bone in two places, so as to produce two large inter-metatarsal foramina. This is a point to which I shall have to refer later on.

On the land Penguins are not so active as in the water, but it is a mistake to suppose that they are plantigrade, or in other words that they apply the lower surface of the metatarsus to the ground when walking or hopping. They walk or hop on their toes like other birds, and it is only when they are resting that they place the metatarsus on the ground, a habit which is by no means peculiar to Penguins. When on the snow or smooth ice they are said to lie down on their stomachs and push themselves along with their wings so rapidly that a man running can hardly keep up with them.

When on shore they sleep a good deal in the daytime, tucking their heads behind their small wings, while they make a hideous noise all night. So I fancy that day and night are much the same to them. They feed largely on cuttle-fish and crustacea, but no doubt they eat fish as well.

In size and in colours both sexes are alike, but the young birds generally differ from the adults.

The Penguins belong entirely to the southern hemisphere; and New Zealand, with the neighbouring islands, may be looked upon as their headquarters, for all the genera except *Spheniscus* are found there. To the south they extend as far as the border of the antarctic ice; while on the west coast of South America they are found as far north as the coast of Peru, and one species inhabits the Galapagos Islands, which are situated on the equator. On the east coast of South America they extend only up to Rio Grande do Sul. In Australia and South Africa they inhabit the southern coasts only.

They are a small group of birds forming a single family. But this family may be divided into three sub-families, which have slightly different geographical distributions. The first sub-family contains the genera *Aptenodytes* and *Pygoscelis*, which inhabit the antarctic regions from the ice up to about 53° S. The second sub-family consists of the genera *Catarrhactes* and *Megadyptes*. These are found between 55° S. and 38° S. The third sub-family contains *Spheniscus* and *Eudyptula*, which do not live further south than 45° or 50°, and extend to the most northern limits reached by the Penguins.

The genus *Aptenodytes* is represented in the New Zealand seas by the King Penguin (*A. patagonica*), which breeds in large numbers on Macquarie Island. *Pygoscelis papua*, commonly known among sealers as the Gentoo or Johnny, breeds in one locality on Macquarie Island. *Catarrhactes schlegeli*, known as the Royal, is found in immense numbers on Macquarie Island. The Rockhopper (*C. pachyrhynchus*) breeds on the Snares and in the West Coast sounds of New Zealand. Sclater's Penguin (*C. sclateri*) has its headquarters at the Antipodes and Bounty Islands, while the Little Macaroni (*C. chrysocome*), known in New Zealand as the Victoria, breeds in small numbers on the Antipodes, Campbell, and Macquarie Islands. *Megadyptes antipodum*, the Yellow-eyed Penguin—sometimes called the Grand Penguin—breeds on Campbell Island, the Auckland Islands, Stewart Island, and the south of New Zealand, generally in groups of about a dozen. It never forms rookeries. The Blue Penguin (*Eudyptula minor*) lives on the coasts of New Zealand from Stewart Island to the Great Barrier Island, north of Auckland, and it also occurs on the coasts of Tasmania and Australia; while *E. albosignata* appears to be restricted to Banks Peninsula. Out of the breeding season stray birds of most of the species may be found north of their breeding-places, but I believe that only four species breed in New Zealand.

That the Penguins are descended from flying birds is proved by the structure of the wing. Not only are the bones on the same pattern as that found in other birds, but several of the muscles of flying birds are represented in the Penguins by non-contractile tendinous bands, which are functionally useless, but which have not yet altogether disappeared. It is certain that they are not closely related to the Auks of the northern hemisphere—which are somewhat like Penguins in appearance—but that they come nearest to the Petrels, or Tubinares, although the two groups are so different in form. This makes it difficult to guess what the ancestors of the Penguins were like.

The oldest Penguin known is *Palæudyptes antarcticus*,* from the eocene or oligocene rocks of New Zealand. But it is a true Penguin, and, except that the wing is proportionally rather longer than in living Penguins, it shows no other intermediary character. The only other known fossil Penguins are four species of *Paleospheniscus*,† and one of *Paraptenodytes*‡ from the miocene of Patagonia.§

* Huxley, Quar. Jour. Geol. Soc., xv., p. 672 (1859), and Hector, Trans. N.Z. Inst., iv., p. 341 (1872).

† Moreno and Mercerat, "Annales del Museo de La Plata Palæontologie Argentina," i., p. 29 (1891).

‡ Ameghino, Bol. Inst. Geog. Argent. (1895), xv., p. 91.

§ *Cladornis pachypus*, also from the miocene of Patagonia, is placed with the Penguins by Dr Ameghino; but its position seems to be doubtful. It is known only by an imperfect metatarsus, which is much longer in proportion to its width than in the true Penguins, and it shows no inter-metatarsal foramina.

It is worthy of notice that the remains of *Palæudyptes* are found in the Oamaru freestone, which is the remains of an old coral reef, and that in the miocene period also the sea, both in New Zealand and in Patagonia, appears to have been warmer than it is now.

Palæudyptes is represented by the humerus, coracoid, femur, and metatarsus. The skull, unfortunately, has not yet been found. It was larger than any living Penguin, probably from 5 to 6 feet high, and was thought by Professor Huxley, who described it, to be more nearly related to the genus *Eudyptes* (= *Catarrhactes* + *Megadyptes*) than to any other.

Palæospheniscus is known by the limb bones and a few vertebræ. It is said by Dr. Moreno and Dr. Mercerat to be nearer *Spheniscus* than to any other living genus, but the inter-metatarsal grooves are not so deep. The four species were about the size of the Crested Penguins of to-day.

Paraptenodytes is represented by the bones of the leg and an imperfect mandible. The latter is long and slender, like that of *Aptenodytes*. The inter-metatarsal grooves are shallow. It was about the size of the King Penguin.

Of the genera of living Penguins *Pygoscelis* connects *Aptenodytes* with *Megadyptes*, and this last genus may be taken to represent the ancestral form of the other two. *Spheniscus* is a specialised form of *Eudyptula*. So if we try to draw up a genealogical tree of the Penguins we must place *Megadyptes* and *Eudyptula* near the base and make *Aptenodytes*, *Catarrhactes*, and *Spheniscus* occupy the apices of the branches. Paleontology points to *Megadyptes* as the oldest living form, but Mr. Pycraft is of opinion that *Eudyptula* lies nearest to the ancestral stock.*

Dr. Wilson† thinks that the Penguins must have diverged from primitive birds when the metatarsal bones had not become completely ankylosed, and that their plantigrade mode of progression may also be a reptilian character. This latter I have already pointed out is a mistake, for the Penguins are as digitigrade as other birds, and if the first was correct we should have to go to the jurassic period to find the first Penguins, which does not seem likely. But as a matter of fact all known fossil Penguins have their metatarsi as closely ankylosed as in any modern species, and more so than in either *Spheniscus* or *Eudyptula*. It is in *Spheniscus* that we find the metatarsi less ankylosed than in any other Penguin, and if this genus has descended from *Eudyptula* the separation must be a case of atavism or reversion, and cannot be taken as a true vestigial character.

As to the colours of the earlier forms of Penguins, we may suppose that they were white below and dark on the back, head,

* Proc. Zool. Soc. (1898).

† Challenger Reports, Zool., vol. vii.

and throat. I infer this last to have been the case because in *Eudyptula* the young in the down has the head and neck brown, and it remains brown throughout life in all the species of *Spheniscus*. It is probably the same in *Megadyptes*, for in young birds the feathers on the throat are brown, like those of the head. In *Catarrhactes schlegeli*, also, the chin and throat are brownish in the young. In all these cases, except *Spheniscus*, the chin and throat subsequently become white, which I therefore suppose to be a later acquisition.

In the other species of *Catarrhactes* the young birds in the down have the throat black; then, with the first feathers, it gets grey or nearly white, and then black again. Also the species of *Pygoscelis* have the chin and throat white when young but black when old. From all this we may infer that the black throat in these species is due to atavism, and that their immediate ancestors had white throats when adult. We may therefore suppose that *C. schlegeli* represents the earliest species of the genus, from which the others have descended, and we may further suppose that *C. chrysocome* has been developed from *C. pachyrhynchus*, because the plumes on the head are so much longer; so that we have *M. antipodius*, *C. schlegeli*, *C. pachyrhynchus*, and *C. chrysocome* as the probable line of descent.

Now let us see if we can trace out the migrations of any of the Penguins. The fact that New Zealand is the only district in which both *Megadyptes* and *Eudyptula* live, as well as its being the former home of *Palæudyptes*, point to New Zealand as the centre of dispersion. Geological evidence helps to explain this, for during the eocene period the Andes had not been formed, so that the high lands of Tierra del Fuego were not connected with the lands of the northern hemisphere. Also South Africa appears to have been isolated from Northern Africa, so that Australasia was the only district where the land of the northern hemisphere pushed down far into the southern hemisphere.

Next, as to the direction of the migration from New Zealand. The species of *Pygoscelis*, *Aptenodytes*, and *C. chrysocome*, being spread round the Southern Ocean, give us no help in this matter; but if the ancestors of *Spheniscus* had passed from New Zealand westward to South Africa we should expect to find their descendants on some of the intermediate islands, such as St. Paul or the Crozets, which we do not. So it seems more probable that they travelled eastwards to South America, where they arrived in miocene times, and thence to South Africa.

In the Southern Ocean the current runs from west to east, and this would favour the spread of the birds towards the east. It is evident that a Penguin could swim across the Pacific Ocean provided it could obtain food on the way, and Sir James

Ross saw some nearly 1,200 miles from the nearest land. It has been supposed that in their migrations they have been much helped by icebergs, and Penguins have been seen sitting on icebergs. But icebergs generally drift to the north, and could not supply the birds with food. On the contrary, the melting ice would probably destroy or drive away any fish or crustaceans in the neighbourhood. That *Spheniscus* should have spread so far north as the Galapagos Islands seems at first surprising, but is easily explained when we learn that the cold antarctic current sweeping up the coasts of Chili and Peru reduces the temperature of the ocean at the Galapagos to 62° or 66° F., whereas its normal temperature at the equator is 81° to 88° F.

But, leaving these speculations, let us come back to the habits of the Penguins. The usual number of eggs in a nest is two, but the Johnny (*Pygoscelis papua*) lays its two eggs at about two months' interval, the second being laid after the first is hatched, so that it has really two broods of one each. They make no nest, but carry their egg between their legs. The King (*A. patagonica*) has improved upon this. It also has only one egg at a time, but it carries this egg in a fold of skin between the legs, so that the egg is quite hidden. The egg also differs in shape from those of other Penguins in being pointed at one end, which must help its being retained in the fold of skin.

The species of *Catarrhactes* make rough nests of grass, where any is to be obtained. Each parent sits on the eggs alternately. When the time for changing comes, the relief places itself close alongside its mate and pushes it off the nest, covering the eggs at once. This is done to prevent the Skua Gulls (*Megalestris*), which are always hovering round, from eating the eggs. *Megadyptes antipodus* breeds under logs of wood or among tussock-grass, only a few pairs living together, while *Eudyptula* and *Spheniscus* make their nests in holes. During the breeding season the King Penguin, as well as the species of *Pygoscelis* and *Catarrhactes*, collect together in large numbers, called rookeries, which have often been described; but the other species do not do so. There are no large rookeries on the Auckland or Campbell Islands, nor among the West Coast sounds of New Zealand. *Spheniscus* breeds in holes, as a defence, no doubt, against predaceous mammals, in South Africa, South America, and Australia, but that cannot be the object in New Zealand. It is only the genera which live on islands, or on the antarctic continent, which form rookeries; and there is an intermediate stage, represented by *Megadyptes*, and sometimes by *Catarrhactes*, which inhabits islands but does not collect together in large quantities. From this we may infer that the habit of forming rookeries is a late one, induced probably as a defence against seals.

The Penguins which live in rookeries spend about eight months on or near the shore and four months at sea, when the breeding grounds are quite deserted; but they do not seem to go far away, as they are rarely seen more than 50 miles from land.

The times of breeding are not yet well known. *Eudyptula minor* is the first, and commences in the early part of September, while *E. albosignata* does not begin until October. In the Antipodes and Bounty Islands *C. sclateri* comes to the land in September, *C. chrysocome* arriving at the Antipodes a little later; and they leave in May or June, when the young are sufficiently strong to undertake a sea voyage. Dr. H. Filhol* says that in Campbell Island *C. chrysocome* begins to lay early in November, while in Kerguelen's Island it does not arrive until then,† and commences to lay about 1st December. In the islands of St. Paul and Amsterdam they are said to be much earlier, arriving in July and leaving for the sea in March. *C. schlegelii*, in Macquarie Island, commences to lay early in November. *P. papua* is an early bird, and at Kerguelen's Island the young of the first brood hatch out towards the end of October and the second in December. *M. antipodius* breeds in New Zealand at the end of October; but in Campbell Island, according to Dr. Filhol, its eggs are laid early in November, the young being hatched out by the end of the month. The King Penguin, at Macquarie Island, commences to lay its eggs about the middle of November.

The Penguins differ much in their dispositions. *Megadyptes* and *Catarrhactes* are sulky in captivity, while the King and the little Blue Penguin are much more friendly, the former especially being easily tamed.

Now, what part has natural selection played in the development of the Penguins? Obviously their feathers, wings, and the backward position of the legs are adaptations for an oceanic life, and the fatty subcutaneous layer is an adaptation for keeping the body warm. All these are unquestionably due to natural selection. But when we come to the generic characters we cannot feel sure that they are all adaptations. These differences are chiefly in the bill and in the tail. The bill in *Aptenodytes* is long and slender, and is curved downwards at the tip. This seems to be an adaptation for catching fish, but we do not know that the King Penguin feeds more on fishes than others. The chief character of *Catarrhactes* is the strong bill, which is swollen at the base of the latericorn; and as the males have larger bills than the females we may suppose that this is an adaptation for fighting, and so may be due to natural selection. But I can

* "Mission de l'Ile Campbell," tome iii., 2 partie, p. 58.

† Kidder, "Contributions to Natural History of Kerguelen Island," Washington (1875), p. 46.

suggest no use for the feathers on the bill of *Pygoscelis*, nor for the longitudinal grooves at the base of the mandibles in *Spheniscus*. The tail in *Eudyptula*, *Spheniscus*, *Megadyptes*, and *Aptenodytes* is short and composed of from 16 to 20 feathers; in *Pygoscelis* and *Catarrhactes* it is long, and composed of 12 to 16 feathers. Of what use can these differences be? Penguins may perhaps use their tails as rudders, but it is difficult to say which of these different tails would answer the purpose best.

We must remember that different genera of Penguins sometimes inhabit the same island—as at Kerguelen, the Falklands, and Macquarie Islands. They seem to have the same food and the same methods of capturing it. Genera which inhabit similar localities when breeding, and which feed together, so far as we know, on the same kind of food, could not have been differentiated by the direct action of external conditions, and yet we find it equally hard to explain how this could have been brought about by natural selection.

The specific characters are chiefly the differences in the colour of the plumage or of the eyes, and some of these characters are probably due to that part of sexual selection which I have called preferential selection. The long plumes of *C. chrysocome* and the yellow bands on the King and Emperor Penguins may be thus accounted for, while the differences in the species of *Spheniscus* may possibly be recognition marks. But there are some exceptions. The black throat of four different species of *Catarrhactes* and two of *Pygoscelis* cannot be due to sexual selection, because we cannot suppose that six different species belonging to two different genera all wished to change their white throats into black ones at the same time. This seems to be due simply to reversion; but it is a very interesting case. It is possible that the red eyes of *C. chrysocome* may be a recognition mark to distinguish it from the brown-eyed *C. pachyrhynchus*. I can imagine it possible that the earliest members of *C. chrysocome* were driven from the rookery on account of their red eyes, and in this way they may have been forced to keep together; but it does not seem likely that the white marks on the wings of *C. sclateri* and *E. albosignata* are recognition marks, for they breed in different localities from *C. pachyrhynchus* and *E. minor*, from which they were derived.

The effects of isolation are not so well marked in the Penguins as in most birds, owing, probably, to their wandering habits and to the difficulty they must experience in returning after a long voyage to the place from which they started. Still we find that *C. schlegeli*, *C. pachyrhynchus*, *C. sclateri*, *E. albosignata*, and the four species of *Spheniscus* all inhabit separate localities. We should expect that *C. chrysocome*, being so widely spread, would show more decided variation than it does. Differences, however, do exist. Mr. Watson has shown that the skull

of the birds inhabiting the Falkland Islands is larger than those of the birds found on Tristan d'Acunha, and that these again are larger than those of birds from Kerguelen's Island, while the Falkland Islands' birds have a smaller bill than any of the others. Also the birds inhabiting St. Paul and Amsterdam are bluer in colour and have longer head plumes than those from New Zealand or the Falkland Islands.

Altogether, I should conclude that natural selection has been instrumental in forming the family characters, and that sexual selection has been the cause of some of the generic and specific characters, but that there are other generic and specific characters which are not due either to one or the other. At the same time there is not the least reason for supposing that any of the characters are due to the action of the environment.

Birds of North-Eastern Victoria.

BY A. G. CAMPBELL, MELBOURNE.

It is difficult to believe that any one tract of country has yielded up all its treasures of knowledge concerning the comings and goings of its natural inhabitants. The State of Victoria, although comparatively small, is of varied physical character, and wherever systematic and earnest search has been made something new or of fresh interest has been brought to light. As a community we are acknowledging the fact that far too little is known of the fauna, particularly the birds, which undoubtedly bear a very important connection with the welfare of a country. We find that native birds, formerly unconcerned onlookers of our labours in the field, are now demanding and taking for themselves a share of our profits, and we also find that in other quarters our productions are threatened by increasing hordes of noxious insects. It is time we sought an explanation, and endeavoured as far as possible to set matters near their former level of interdependence. By encouraging the insectivorous birds to live with us we will find them our greatest friends, for we shall then be fighting the hordes of the insect world with Nature's own weapons.

A sad mistake is made, too, in clearing off all the natural timber from the face of the country. Where a patch is still left standing we can see with what delight the birds still cling to it, congregating there and making it a centre of operations on the surrounding open country.

Nearly three years' residence in the agricultural and viticultural area of north-eastern Victoria, bordering the River Murray, proved to be full of opportunities for acquiring a knowledge of the bird inhabitants of that district, and the result,

in a series of notes, it is hoped will prove of interest, if not of some service.

The district under notice, it must be observed, although somewhat small, contains country of no less than four distinct types, but from the bird inhabitants of these I do not doubt that an estimate or gauge of the whole north-eastern portion of the State can be obtained, and further even, for it should include eastern Riverina also.

The notes which follow were collected within an area extending from about twenty miles to the south of the Murray to an equal distance on the other side. Thus there is included in the extreme south a portion of the granite ranges in which Beechworth is situated, and, near Chiltern, an extensive silurian out-crop clothed with ironbark timber (species of eucalypt). These two portions may be grouped, the ironbark especially having very distinctive bird life. Northward toward Rutherglen fairly open undulating country exists. At places in the low-lying portions large patches of red gum and box trees (both species of eucalypts) point significantly to the approach of the great river. The third group takes in the bird life of the river itself, with its timbered flats, scored with billabongs and swampy reed-beds; while the fourth carries us quickly to regions where the bull-oak (Casuarina) and Murray pine (Callitris) flourish among sand-hills and broad stretches of fertile plain. This last group includes the sheep country to the north of Corowa, N.S.W., and has, too, like each of the three other divisions into which the physical face has been roughly divided, birds of its own, rarely, if ever, found outside its domains.

It will be as well, however, to take the birds in order, commencing with the *Raptores*, and those which specially represent a particular class of country will be mentioned in their proper places.

The Spotted Harrier (*Circus jardinii*) and the common Harrier (*C. gouldi*) are local birds, the former preferring for its domain a patch of reed-beds, and the latter seemingly with more delight for a crop of wheat or long grass, where it can hunt up and down for such provender as Quails and young hares, and where often its nest is to be found. The Goshawk (*Astur approximans*), Sparrowhawk (*Accipiter cirrhocephalus*), Little Eagle (*Nisaetus morphnoides*), and Whistling Eagle (*Haliastur sphenurus*) are constant visitors during summer, autumn, and winter, but depart evidently for more suitable breeding grounds during spring. The last-named species may often be seen, three, four, or five together, on a fine day, sailing round and upward in large circles, occasionally uttering their curious whistle-like cry. One often wonders what is the object of such soaring. The Black-cheeked Falcon (*Falco melanogenys*) and the Little Falcon (*F. lunulatus*) keep Sparrows and all small fry in mortal terror,

and will audaciously come into trees alongside a dwelling in search of prey. One day a Black Falcon (*F. subniger*) was observed to make a tremendous swoop, from some distance in the air, and neatly pick up a Sparrow about to enter a hedge.

The Brown Hawk (*Hieracidea orientalis*) and the Kestrel (*Cerchneis cenchroides*) are common. It is very remarkable sometimes how quickly small birds become aware of the presence of a bird of prey, even before it is in sight. Very often this is the result of hearing the alarm notes of other birds from some distance, when immediately the signal is carried on, and well understood by all feathered creatures around.

The Raven (*Corone australis*) is, as elsewhere, a prying and cunning customer, picking up all offal and refuse, but never on any account being led into an ambush. The Grey Crow-Shrike (*Strepera cuneicaudata*) and the smaller Pied Crow-Shrike (*S. graculina*) are both winter visitors, coming from the ranges in the south, where they nest. The Pied sometimes appears in great numbers. A flock of several scores arrived about May (1900), and stayed for some time before moving on to another portion of the district. They are exceedingly noisy birds, and always attract attention by their curious manner of following one another in a long line when flying. Being insectivorous, such a company must do an immense amount of good in the district where they sojourn. The White-winged Chough (*Corcorax melanorhamphus*), as well as the Grey Jumper (*Struthidea cinerea*), are only met with in pine ridges across the river. Their habits are very similar in that they always go in companies and jump about the trees in a lively manner. In the nesting season they build "co-operative" mud nests. The Magpie Lark (*Grallina picata*) and the Shrike-Thrush (*Collyriocincla harmonica*) need barely a mention, for they are cosmopolitan. The Oriole (*Oriolus viridus*) and the Black-faced Cuckoo-Shrike (*Graucalus melanops*) are also present. The smaller *Graucalus mentalis* is only seen near the river. Two nests were found, both in trees growing within a few feet of the water's edge. The White-shouldered Caterpillar-eater (*Lalage tricolor*) is the rowdy songster found among the pines and on the box tree flats.

The Flame-breasted Robin (*Petrarca phoenicea*) comes thus far inland during its winter visit from Tasmania or the uplands, arriving about end of March and leaving again early in September. The Scarlet-breasted Robin (*P. leggii*) is not often seen, its place being taken by the pretty little Red-capped species (*P. goodenovi*). A pair of these Robins built continually in certain fruit trees, one nest in 1899 having eggs as late as 13th January, and at the end of the following winter the little birds recommenced nesting operations in a prickly acacia hedge close by, because there were yet no leaves on the fruit trees; two eggs were laid by 31st July.

The Short-billed Tree-Tit (*Smicrornis brevirostris*) frequents the thick scrubby growth, where its tiny round covered-in nest may be found; one was seen built in a pendulous branch not 4 feet from the ground. The White-throated Fly-eater (*Gerygone albigularis*) was recorded for the first time in Victoria from this district on 4th October, 1899, but simultaneous with the announcement came another concerning the same species being found at Western Port.* This bird soon attracts attention by its remarkably loud and pleasing song. Several were seen at Rutherglen, but no traces of nesting operations could be found. A second species, however (*Pseudogerygone culicivora*), was discovered nesting, and its eggs (the first recorded for Eastern Australia) were taken on 22nd September, 1899. Subsequently no less than eleven clutches of eggs were procured from several pairs of birds which were confined to a patch of second growth timber about 100 acres in extent. Accompanying one clutch was an egg of the Narrow-billed Cuckoo (*C. basalis*). The nests are neatly built of soft bark and cobweb, ornamented with spiders' cocoons and even bits of newspaper; the tail-like appendage characteristic of the species was found to vary in length from 2 to 6 inches. One of abnormal length measured 11½ inches. The birds themselves are greyish in colour, and have not the gayness of the former species, with its olive back, yellow breast, and white throat, but they have a song which, though differing, is just as pleasing, and is remarkably loud for so small a bird. During a visit to a patch of pine scrub some 20 miles north of the Murray the Southern Fly-eaters were found at home there also, and in the ironbark near Chiltern one solitary pair was noted. The species does not appear to leave the district during winter.

The Blue Wren (*Malurus cyaneus*), the White-shafted Fantail (*Rhipidura albiscapa*), and the Black and White Fantail (*R. tricolor*) are, as usual, among the commoner birds. Specimens of the male Blue Wren were seen in August, and again in February, undergoing the moult from the brown into the blue livery for summer and *vice versa*. The Restless Flycatcher (*Sisura inquieta*) lives and breeds on the red gum and box flats, while the Satin Flycatcher (*Myiagra nitida*) was noted several times during winter. The Reed-Warbler (*Acrocephalus australis*) and the Grass-Bird (*Megalurus gramineus*) are essentially inhabitants of the reed-beds near water. The Little Field-Wren (*Chthonicola sagittata*) rejoices in the long grass among brushwood and timber.

The diminutive Little Tit (*Acanthiza nana*), the Striated Tit (*A. lineata*), and the Chestnut-rumped Tit (*A. uropygialis*), are co-partners with the Fly-eaters beforementioned of the small

* *Victorian Naturalist*, vol. xvi., No. 7, p. 114.

scrub and sapling growth, in which particular place, however, all small fry delight to congregate. A nest of the Chestnut-rumped Tit was found in a cleft of a tree-trunk—a customary site. Several instances were known of the Yellow-rumped Tit (*Acanthiza chrysorrhoa*) nesting very early in the season, one being seen with eggs during last week in July, from which the young had flown by the 1st of September. Another nest contained small young on 1st August, 1899. The time elapsing between the completion of the clutch and the young leaving is approximately five weeks.

The Babbler (*Pomatorhinus temporalis*) and the White-browed Babbler (*P. superciliosus*) are both found in the district, but the latter and smaller species is the commoner. In the winter of 1899 it was found nesting during the coldest weather, young ones being seen in July. The Brown Song-Lark (*Cinclorhamphus cruralis*) and the Rufous species (*C. rufescens*) are inhabitants of open grass and crop lands. The former put in its appearance on 29th August, 1899, and about five or six pairs took up their abode in a paddock of no more than 30 acres. One nest was discovered built into a cattle hoof-mark in the ground. The birds left early in November, and did not return the following season. In fact, only one or two pairs of both species were noticed in the district in that year (1900). There must have been a good food supply inland, and the birds, taking advantage of it, were probably remaining behind.

Besides the common species of Bush-Chat (*Ephthianura albigrons*), the beautiful red-breasted *E. tricolor* showed itself on 11th September, 1899, but only stayed a few hours in the locality of Rutherglen. The flock, passing on, was not seen again. In the spring of 1896—it is stated by a local person—these little birds arrived in the district in great numbers, and nested among the vines in the open vineyard. The chubby little White-face (*Xerophila leucopsis*) is a common bird, and stays the whole year round, appearing to be even more homely than the familiar "Tomtit." It nests under the eaves of buildings and in hollow posts. Two nests were built in the woodheap, and a third among some garden refuse. Nesting operations are commenced very early, for on the 1st of August one year and on 20th July the next (1900) completed clutches were seen. Two sets taken contained five eggs each.

The Black-backed Magpie (*Gymnorhina tibicen*) is the representative of the genus in the northern part of the colony, and in Rutherglen district it is exceptionally plentiful. The whole year round the birds feed in flocks on the open grass land. This, together with the fact that only two nests were seen in the district during two seasons, leads to the belief that many of them do not nest. One particular flock which came under observation appeared to possess a domain of its own, and any

other Magpies which dared to come near were rigorously hunted; but it was amusing to see these same autocrats make off helter-skelter on the appearance of a well-known Harrier, which for many months made an almost daily visit to the paddock. It was always left in undisputed possession for the time being. A pair of immature Magpies laid the foundation of a nest in a solitary sapling by the roadside on 3rd August, 1899. To test their curiosity a number of pieces of wire, sacking, cloth, and hayband were strewn about near, but the birds carried off nothing beyond five or six pieces of hayband, preferring for building material the prickly sticks from an acacia hedge, which they brought some distance. More than a month later, on 8th September, the clutch of four eggs was completed. Concerning the "black backs," many interesting phases of plumage are to be seen, some birds having a very narrow black band between the shoulder blades, while others have almost the whole of the back black. The Butcher-Bird (*Cracticus destructor*) must also be noted, the Shrike-Tit (*Falcunculus frontalis*) as well being found in the district.

A bird confined to the country nearer Chiltern is the *Oreoica cristata*, its beautiful bell-like notes being always heard among the ironbarks. A nest was found hidden away in a mass of new shoots springing from a stump. The Yellow-breasted Robin (*Eopsaltria australis*) one would hardly expect to find in this class of country, but nevertheless it inhabits the ironbarks also. On a calm early morning its "psalm of dawn" seems to vie with the Bell-Bird's notes for sweetness. Just in this country, too, the White-throated Thickhead (*Pachycephala gutturalis*) is found, and the Rufous-breasted species (*P. rufiventris*) also, but out in the drier northern stretches the latter only ventures. But the ironbarks can be termed the home of all the smaller Honey-eaters of the district. They sport among the wild flowers and gum blossoms, and make the whole place lively with their calls, giving the idea that every bush and sapling contains a voice. The Spinebill (*Acanthorhynchus tenuirostris*) loves to pry into the flowers of the ironbarks or the mistletoe, and may sometimes be seen disputing with the brown-coated *Ptilotis fusca* some choice hunting-ground, while among the smaller saplings the Yellow-tufted Honey-eater (*Ptilotis auricomis*) lives contentedly. Patient search for the nests of the last-named revealed three, all hidden away in low saplings. The Warty-faced Honey-eater (*Meliphaga phrygia*) gives a decided touch of colour to the somewhat æsthetic grey-green of the ironbark, and its bark-made nest is often seen in conspicuous positions. From the tree-tops two species of *Melithreptus* can be procured—the Brown-headed (*M. brevirostris*) and the Black-chinned (*M. gularis*). The White-plumed Honey-eater (*P. penicillata*), which is so common near the river, is not seen at all here, but the Red-

wattle Bird (*Acanthochæra carunculata*) arrives in numbers each year after nesting is over, to share during the winter the abundant food supply. The Friar-Bird (*Philemon corniculatus*), the large Blue-faced Honey-eater (*Entomyza cyanotis*), and the Noisy Miner (*Manorhina garrula*) are generally found about the river frontage.

The Brown Tree-Creeper (*Climacteris scandens*) found in the open country and the *C. leucophæa* in the more hilly, the *Zosterops cerulescens* and the *Dicaeum hirundinaceum* are all birds noted in many places throughout the districts under notice. Two nests of the Dicaeum were taken from low saplings, containing each a valuable set of three eggs. The Striated Pardalote (*Pardalotus ornatus*) arrives in the district before the end of August, staying during the breeding season and leaving again in April. It usually nests in trees, but in the sandy banks of the Murray some of the birds scoop out a chamber for their grass-made nests at the end of a tunnel 9 to 12 inches in length. Other nests have been found some distance inland, tunnelled into the side of a ditch. The pretty Spotted Pardalote (*P. punctatus*) is found near Chiltern. Colonies of the Tree Martin (*Petrochelidon nigricans*) share numerous dry trees on the river flats, while the common Swallow (*Hirundo neoxena*) and the Fairy Martin (*P. ariel*) are of necessity obliged to build nests of red material, because of the typical colour of the soil, with the result that they have quite a different appearance to those usually seen, made of grey mud. The Fairy Martin insists on building under the eaves of a house, and no less than 75 nests have been seen in one colony, from which the birds, coming and going, feeding brooding mates or nestlings, create a great disturbance. The birds first arrived in spring, on 28th August one year and 24th August the next. Their congeners, the Tree Martins, arrive at the same time, and it is not improbable that both make their migratory journey in company. Nest-building with the Fairy Martins commences soon after their arrival, and great difficulty is experienced at times in collecting the necessary mud. The birds will not go far for their material; if it cannot be procured near, their work at the nest ceases until the next shower of rain. The colony before mentioned, however, had a permanent collecting ground around a water tap, where the birds jostling and scrambling for mud, had soon quite a large hole scooped out. At a certain stage in the building operations, just before the last 2 or 3 inches of spout were completed, the final possession of the nest was a matter very much in doubt, for then pairs of house-hunting Sparrows would do their best to oust the rightful owners, and very often succeeded. However, the Martins persevered with their tasks, but it was not until the 13th of October that the first eggs were laid. They reared one brood of young, and finally

left just about the New Year. The Spine-tailed Swift (*Chetura caudacuta*) pays its usual visit in February and March, probably on returning northward. A flock was more than once observed towards evening going through curious circular evolutions high up in the air; at the same time a continuous chirping was plainly heard. In dull weather they fly very close to the ground.

The Ground-Lark (*Anthus australis*) and the Bush-Lark (*Mirafra horsfieldi*) are readily noted; so also are the Wood-Swallows (*Artamus sordidus*, *A. superciliosus*, *A. personatus*, and *A. leucogaster*), the last-named being found exclusively along the watercourses. The Finches are represented by *Steganopleura guttata* and *Egintha temporalis*. The Dollar-Bird (*Eurystomus australis*), on the Murray, is found at almost its southernmost limit. In some hole in the large red gum trees it lays its eggs, but the mate goes straight away on the approach of danger, and the nesting hollow is difficult to locate. The Bee-eater (*Merops ornatus*) is another beautiful bird; it is found nesting about most of the sand ridges, drilling a long tunnel into the side of a ditch or road cutting, or even into a mere mound a few inches in height. After following the passage for 3 or even 6 feet, the four white eggs are reached lying on the bare sand in the chamber. Strewn about are nearly always found the wing-cases, legs, and other hard parts of beetles, particularly cockchafers, the remains probably of food brought to the sitting bird. The Bee-eaters arrived in the district on 8th October and on 2nd October in the years 1899 and 1900 respectively, and the latest date on which they were seen was 22nd April. The Laughing Jackass (*Dacelo gigas*) is a useful member of the community, for, with the Magpie, it is often found about stackyards catching mice. Particularly during threshing and chaffcutting the birds congregate, and, showing little fear of man, pounce down on the mice disturbed from cover. One Jackass met with an unfortunate reward, for it was found one day hanging from the top of a post, where its leg had been caught by loose wire, and some Magpies, following the strange but common plan in nature, were endeavouring to end the poor bird's life. The Sacred Kingfisher (*Halcyon sanctus*) is a summer visitor, while the Blue Kingfisher (*Alcyon azurea*) is found along the river and its backwaters.

Whether the Pallid Cuckoo (*Cuculus pallidus*) remains during the winter is doubtful. However, a bird was seen during the second week in June, 1899, and the first whistle heard on 1st July. The Fan-tailed Cuckoo (*Cacomantis flabelliformis*), the Bronze (*Chalcococcyx plagosus*), and the Narrow-billed Bronze (*C. basalis*) all arrive by September. The Square-tailed Cuckoo (*C. variolosus*) was found in one particular spot at Chiltern, and one solitary specimen of the Channel-bill (*Scythrops nova-*

hollandiæ) was noted. Visitors of the parrot tribe are the Lorikeets (*Glossopsittacus concinnus*, *G. porphyrocephalus*, and *G. pusillus*), as well as the Black Cockatoo (*Calyptorhynchus funereus*) and the little "Betcherrygah" (*Melopsittacus undulatus*). The *Cacatua galerita*, *C. roseicapilla*, *Calopsittacus novæ-hollandiæ*, *Polytelis barrabandi*, and occasionally *P. melanura*, *Platycercus flaveolus* and *P. eximius* are all found breeding among the red gum trees on the river flats. The Red-backed Parrakeet (*Psephotus hæmatonotus*) and the *Neophema elegans* both prefer the more open grass country, while the King Lory (*Aprosmitus cyanopygius*) and the Red Lory (*Platycercus elegans*) are only found visiting the hills to the south during the winter months. The Ground Dove (*Geopelia tranquilla*) would hardly be expected in this list, but several pairs were found by the creek at Chiltern. Their loud calls in the early morning conjure up one's visions of the belts of timber bordering a plain in Riverina or the Mallee. The Bronzewing (*Phaps chalcoptera*) is occasionally flushed in the thicker scrubs.

In all open grass lands and crop lands three species of Quails, *Coturnix pectoralis*, *Synacus australis*, and *Turnix velox*, are in numbers; here also the stately Bustard (*Eupodotis australis*) still stalks, not in peace and plenty as in former years, but in fear and trembling, for he knows that the existing game laws are of little protection to him.

In the ironbark scrub about Chiltern the Painted Quail (*Turnix varia*) has curiously enough taken up its abode, and its melancholy cooing call might in such a place easily be mistaken for that of a Bronze-winged Pigeon.

Away back from the Murray, in the undulating country—the fourth group under reference—where sand ridges, clothed with pine and bull-oak, are interspersed with excellent sheep-rearing areas, there are here and there large plains where storm waters collect during wet seasons; or perhaps at one side there may be a natural depression, with a permanent lagoon of no great depth but of sufficient attraction to induce colonies of the beautiful Marsh Tern (*Hydrochelidon hybrida*) to take up their quarters thereon. Their nests, built of masses of water weed, are found floating on the surface, but on 11th October, 1900, when a visit was paid to a rookery, full clutches of eggs had not yet been laid. The birds, in silvery plumage, are continually circling about after the manner of Swallows. Along the margins of these lagoons, or in patches where the water on subsiding leaves tiny mud islets, there are found the eggs of the White-headed Stilt (*Himantopus leucocephalus*), the owners of which fly round excitedly, uttering their peculiar puppy-like cries, and finally alight a little way off, standing in water as deep as their long legs will allow. These islets provide a suitable resting-place also for the Spur-winged Plover (*Lobivanellus lobatus*), and are also the feeding-grounds of hundreds of "Flock

Snipe," or *Tringa (Heteropygia acuminata)*, and the common Snipe (*Gallinago australis*). Consequently, during the season, there is much good sport to be had among them. Nests of the Hoary-headed Grebe (*Podiceps nestor*) were also seen. The Crane (*Antigone australasiana*), the Stone Plover (*Burhinus grallarius*), and the Black-breasted Plover (*Zonifer tricolor*) are frequenters of the plains adjacent.

Coming back to the Murray again we find many of the larger water birds sporting themselves about the billabongs, and making use of the reed-beds in the season for a nesting retreat. The Swan (*Chenopsis atrata*), the Duck (*Anas superciliosa*), the Coot (*Fulica australis*), the Bald-Coot (*Porphyrio melanonotus*), and the Ibises (*Geronticus spinicollis* and *Threskiornis stictipennis*) all share with the Bittern (*Botaurus poicilopterus*), and possibly the Crakes, the welcome shelter. Along the margin by the grassy bank the Rail (*Hypotaenidia philippinensis*) is disturbed, and on the patches of sand the Black-fronted Dotterel (*Egialitis melanops*) finds a home. But the birds which are seen about such romantic quarters as a Murray lagoon are many and varied: a whole volume could be written of their characters and habits. Besides the foregoing, the Herons, *Ardea pacifica* and *A. novæ-hollandiæ*, *Herodias alba*, and *Nycticorax caledonicus*, together with the Cormorants, *Phalacrocorax novæ-hollandiæ*, *P. melanoleucus*, and *P. strictocephalus*, must also be included, not forgetting the dainty Grebes, *Podiceps cristatus*, *P. nestor*, and *P. novæ-hollandiæ*.

Many others doubtless could be added to the list by an observer in a favourable season, but those recorded serve to show what a great variety of birds inhabit ordinarily the swamps and overflows about the Murray. One particular place near the river, about three miles down stream from Corowa, should be watched critically by naturalists, especially those interested in the protection of waterfowl. Lake Moodemere, as it is called, is a narrow sheet of water of some considerable length, with quite 150 acres of excellent reed-beds upon it—a natural breeding-ground for birds. This lake, together with a large flat surrounding, has been kept as a reserve for birds for some years, under the supervision of the Rutherglen Shire Council. The result is that birds are there in hundreds, breeding almost undisturbed, and all so tame that they take but little notice of anyone about the water's edge. There is now an agitation to remove all restrictions, because some of the dry rush-beds have proved a shelter for a few foxes. If this is done, and the lake is thrown open for shooting, then destruction and demoralization of the bird inhabitants, which have been encouraged to live there and to look upon the locality as a safe retreat, will quickly follow. Notwithstanding a saying that public or governing bodies "have no souls," we may safely appeal to the intelligence of the local shire council not to allow their wards to be so dispersed.

Some Southern Swallows.

BY H. STUART DOVE, F.Z.S., WEST DEVONPORT, TASMANIA.

OUR spring equinox, in late September, proved very wet and stormy, and on the evening of the 23rd, after a day indoors, we were just at sunset strolling up and down the verandah, searching the face of the sky in the endeavour to discover what the morrow would bring forth. There had been an unpleasantly moist wind from the eastward—that is, off the sea—all day, accompanied by a constant drizzle of small rain, and now, as the sky cleared somewhat at sunset, a strange commotion was visible up aloft. A rapid scud of stratus cloud flew over from the northward, from the direction of Bass Strait and the Australian continent, and this was sandwiched between two layers of cloud, both of which came from the south-west, usually our fine quarter. All were flying over in detached pieces only, so that the direction of each was plainly visible. After a while, and before daylight had faded, the scud from the Strait seemed to be lifted high and become cirrus, while on earth a south-westerly wind sprang up, and all the lower clouds sailed with it. In the midst of all this cyclonic disturbance, there appeared, high up over the tops of the tall stringybarks, some brave little Wood-Swallows (*Artamus sordidus*), newly arrived from over the water; they did not seem to be at all disturbed by the elemental warfare just described, but sailed gracefully on their distinctively broad pinions, some tracing whole circles, some half-circles, others gliding along in straight lines. Were they making a survey of their new territory, and settling upon likely spots, in their mind's eye, for summer abodes and nesting-places, or had they struck on a calm space between the opposing winds, and were there coursing the insects which had lighted on the same haven? The Wood-Swallow is our one Tasmanian representative of the family Artamidæ, and section Starling-like Passeres, “distinguished by the possession of 10 primaries,” the first rudimentary. This structural difference divides it from our other two Swallow visitors—the Welcome and Tree Swallows—which possess 9 primaries. Its manner of flying is quite characteristic among its relatives, as it sails gracefully, quite in Starling fashion, taking short flights from tree to tree, or to stump or fence. This bird betrays no fear, preferring the clearings to the forest, and is a universal favourite on account of its graceful movements and familiarity. We have known an occasional settler shoot a few because he said they ate his bees, but we suspect it was the drones only which were taken. Very few birds willingly take a stinging insect unless the latter is first disabled from some accident. Mistakes are sometimes made, too, through casual observers confounding the “eristalis” or “drone-fly” with the honey bee. The former is very bee-like,

but is stingless, and birds take it with impunity, and may thus be wrongfully accused.

The Wood-Swallow is said by some naturalists to have the habit of hanging together like a swarm of bees when returning from its winter journey, or mustering for migrations; but for this we cannot vouch.* The general colour is expressed by its specific name—*sordidus*, greyish-brown; both the wings and tail are edged with white, which adds to the pleasing appearance when on the wing. The nest is generally placed in a spout—that is, a hole in a tree, generally a eucalypt, where a limb has been torn out by the wind or has decayed and fallen from its own weight. The nest is usually formed of fibrous rootlets, twigs, and grasses; the eggs, three or four in number, are whitish, with dark spots, zoned round the broad end. Its notes are mostly chirps of a reedy tone, not unpleasing, and we may represent them by the words “Phee-pee,” “tweet-tweet,” “pheet-a-pheet-pheet.”

The Tree and Welcome Swallows have a good deal of resemblance when seen upon the wing, but the former usually flies at a greater elevation, and lacks the glossy blue back and red throat of the latter. The Tree Swallow or Martin (*Petrochelidon nigricans*) makes its appearance with us much later than its congener, and takes up its abode among the large trees which abound on the coast. Like Artamus, this bird is fond of a clearing in the forest, and often chooses as a nest-site one of the great gums which has been killed by ringing, and in the trunk of which a convenient aperture has been formed by the falling out of a limb. In our own clearing a pair of these birds nested year by year in a tree which stood 100 yards or so from the cottage, and always in the same aperture, about 60 feet up. There is no actual construction, the eggs (usually three in number, whitish, with red-brown spots) being deposited upon the soft decaying wood at the bottom of the aperture. This Swallow usually hunts through the air at a good elevation—say 60 to 80 feet—but occasionally descends much lower, and when the young are fledged they will come and alight on the garden-ground, picking about amongst the straw litter.

The Welcome Swallow (*Hirundo neoxena*) reminds one of the House Martin in the Home countries by its utter fearlessness of man and its fondness for the neighbourhood of his dwellings. If there is a cottage at all handy the little *Hirundo* will fix its abode against the wall just under the inside corner of the verandah-roof, or on the top of the small ledge formed by the architrave over the window; should the verandah be lacking, the nest will be placed up under the projecting eaves. As with the House Martin, the structure is open and cup-like, formed of mud, and

* Well-authenticated cases of these birds clustering are mentioned by Gould, and by more recent writers. Even in captivity Wood-Swallows have been noticed clinging together, head downwards, to the underneath top-side of their cage.—EDS.

lined with feathers and grasses. This summer we have been keeping under observation a pair which built under a friend's verandah, and brought out their three young in December; after a few weeks' spell they built a new nest under another portion of the verandah-roof, and have now, during the third week in February, brought off their second brood. We are curious to see whether a third nest will be constructed, as still another eight weeks of fine weather may be fairly relied upon. The Welcome Swallow is a very pleasing little bird in appearance, the shining dark blue back contrasting strongly with the white under surface and rust-red throat. The wings are long and pointed, and the tail markedly forked.

We will now pass to the consideration of a bird very different in its demeanour and habits from our familiar gentle tree-frequenting Artamus, and one which, although usually considered a close relative of the Swallow, is placed in our Tasmanian list quite away from it, in the Picarian order. This is the Spine-tailed Swift (*Chaetura caudacuta*), our one representative of the family *Cypselidæ*, although occasionally one of the other Swifts may make its appearance in our island. As the Spine-tails breed in China and Japan, they only fly down here for a few months while insects are scarce in their Asiatic haunts because of winter. They are not usually seen here before January, nor often after the middle of March, so that they are last to come and first to go of all our summer visitors. We have this year, however, a late record, which will be given in its place.

The Swift's entire holiday in the south seems to be spent on the wing. We ourselves have never seen it alight, nor is there any authentic record of it having done so in Australia.* This means a wing power vastly in advance of any other bird found in these regions. Sometimes they will come down near the ground while coursing their insect prey. Early in January two were noted at Flowerdale, on a cloudy warm afternoon, flying at no great height above the garden, and these were the first noted this summer; a little later on several were seen at the same place. Near the middle of February we were visited by a strong hot north-westerly wind, during which the thermometer rose very high, and clothing became a burden. In the afternoon we could perceive distinctly a strong brickfield odour, caused by the fine Australian dust, which was brought across the Strait by this hot wind.

On the following eve about 50 Swifts were observed high up (the elevation was perhaps 400 to 500 feet), circling and poising against the north-west wind. The heat of the previous day had moderated, and the evening in question was fine and cool, as were the succeeding ones, on which birds were again observed,

* See "Stray Feathers," this issue, page 31.

although few in number. This was the first occasion, as far as we can remember, on which we have ever seen this Swift in numbers; usually it occurs in twos and threes. But at West Devonport, also on the shores of Bass Strait, we were favoured this autumn with a wonderful sight. At the autumn equinox, the 22nd day of March, the weather was cold and squally, wind veering west to south-west, with occasional showers. On returning to our cottage from the sea beach at about 4 of the afternoon a wonderful concourse of Swifts was seen, apparently mustering for departure. Many hundreds, probably thousands, were passing backwards and forwards at all heights from 30 feet to 300 or more. The whole atmosphere seemed thick with birds, from the near foreground right away to the wooded hills beyond the fields, vastly more Swifts than we had seen in all previous experience. The main body probably migrated at this time, but many remained, for on the 3rd day of April numbers of Swifts flew about the garden and all around, chasing winged ants, which were swarming in the air; these ants were of a blackish-brown colour, nearly half an inch long. There had been much rain from the eastward during the morning and the preceding night, and the ants usually swarm in the air on these damp autumn days. While coursing their prey the birds flew as low as 16 feet from the ground, and went up to about 70 or 80 feet.

On Good Friday, the 5th day of April, another storm took place, and in the evening Swifts again made their appearance. After this we expected to see them no more, when, behold! on the 24th day of April, while exploring the tea-tree flats near the sea, we were much surprised to observe several of these birds flying leisurely about at a fairly low elevation. An extremely late stay for our aerial visitants, and indeed these were the last seen of any of the Swallow clan, although two other migrants were heard even later in the season—the Summer-Bird (*Graucalus*) at the month's end, and the Fantailed Cuckoo two days after.

Notes on Some Familiar Birds.

BY J. R. M'CLYMONT, M.A., BROWN'S RIVER ROAD, NEAR
HOBART.

ONE day in September last I noticed a small bird—I was too far off to recognize the species—fluttering about in front of a Pallid Cuckoo (*C. pallidus*) perched on a fence. Its movements resembled those of a bird struggling to free itself from a noose in which its feet were entangled. The fluttering continued for several minutes until the Cuckoo flew away. On another day

(20th October) a Yellow-throated Honey-eater (*Ptilotis flavigularis*) was observed flitting hurriedly from perch to perch before a Pallid Cuckoo near the same spot. In one of its hurried flights it grazed the Cuckoo's head, causing the latter to flinch slightly, and this was the only movement on the part of the Cuckoo on either occasion. This went on for four or five minutes until the Honey-eater flew away. What meant the strange agitation of the two non-parasitical birds, the almost absolute passivity of the other? The true solution would be interesting. Mere playfulness on the part of the smaller birds, and a love of teasing the intruder, may be the explanation.

Much forethought and ingenuity are involved in the selection of a suitable nest and of the right foster-parent for its young; and these qualities, I think, save the Cuckoos from any charge of stupidity or maternal incapacity. There are several points of interest in connection with these birds which are worthy of close observation. I venture to mention a few of them—1. Migratory range of the various species. 2. Complete lists of nests appropriated by each species.* 3. Whether other birds, either singly or collectively, drive the Cuckoo from their nests. 4. Whether the young birds consort with and accompany their parents or otherwise. 5. Whether the Cuckoo's egg is laid in the nest of the foster-parent or otherwise.

The following are some of the dates of the appearance of the Welcome Swallow. It appeared last year at Kingston, about 10 miles from Hobart, on 15th September. In 1891 I noted its appearance at Koonya, Tasman Peninsula, on 23rd September. I believe that it appears in the Huon district very late in September. The disproportional lateness of its appearance in the two last-named districts may be due in a measure to their greater humidity, later springs, and less abundant supply of insects for food. It may be worth noting that the advent of Swallows at Kingston (sea level) on 15th September was followed by their appearance on 20th September on a neighbouring hill, at an altitude of about 600 feet—an extension of migration into the third dimension of space. From 20 to 30 Swallows were seen, singly and in pairs, over this locality on 1st April. They were heading in a northerly direction, flying high and rapidly, with the exception of one bird, which kept near the ground, hawking for insects now and then. Probably the straggling band was being augmented as it sped along. The day was fine and calm, the following one being chilly and showery.

The Wood-Swallow (*Artamus sordidus*) sometimes evinces a

* Lists up to date of foster-parents of the better known Cuckoos are furnished in "Nests and Eggs of Australian Birds" (Campbell). On page 565, 35 foster-parents are recorded for the Pallid Cuckoo.—Eds.

liking for bees. I have watched them in the garden of a bush homestead picking off bee after bee with great dexterity and pertinacity, both bird and insect being on the wing. After each successful catch the Wood-Swallow returned to a neighbouring blue gum, and when clinging to the strips of bark which were becoming detached from the trunk it was extremely difficult to detect it, so nearly did the colour of the bird resemble that of the fresh bark of the eucalypt.

The weak flight of the Fantail (*Rhipidura diemenensis*) is in marked contrast to the exquisite curves oftentimes described by the Wood-Swallow. The perpetual jerky movements of this Flycatcher, both when on the perch and when on the wing, suggest a limited range of vision and the need of extending it. The young birds of the first year have a white line across the throat above the black throat-mark, and white spots on the head above the eyes and behind the ears. The remainder of their plumage is grey, except the breast, which is pale buff. Could a prize be offered for the handsomest nest, it would probably be awarded to the Humming-Birds, whose nests are marvels both of structural beauty and of ornamentation. The nest of *Rhipidura diemenensis* somewhat resembles the Humming-Bird's model, but is, of course, larger, and has a short stem added to the cup or bowl.

Late in January last a nest of the White-bearded Honey-eater (*Meliornis novæ-hollandiæ*) was taken in a briar bush close to a public road, a few miles from Hobart. The nest is constructed externally of shreds of bark, chiefly that of *Eucalyptus obliqua*, and is lined with downy seed-stems of a clematis and a few horsehairs. It is $3\frac{1}{4}$ inches across and 2 inches deep. The egg cavity measures $2\frac{1}{4}$ inches in diameter and $1\frac{1}{4}$ inches in depth. Of the three eggs in the clutch the ground colour of one was decidedly paler than that of the others.

The Native Hen (*Tribonyx mortieri*) has a place amongst Rails which swim occasionally. In crossing a running stream it loses but little owing to the current.

I do not know if Cormorants are generally accounted swimmers under water. On one occasion I remember seeing one swim a little below the surface for a distance of 40 or 50 yards. Its wings were partly opened, as those of a bird preparing for flight.* This was in a sheltered bay and near the shore. I think the species was *P. gouldi* (*leucogaster*).

* Although the wings are semi-expanded locomotion is effected by the feet — EDS.



Nest and Eggs (*in situ*) of the Emu,

FROM A PHOTO. BY A. J. CAMPBELL.

Emu Eggs.

BY A. J. CAMPBELL, MELBOURNE.

AN article on "Emu Feathers" from the pen of Mr. D. Le Souëf, C.M.Z.S., appeared in the initial number of our journal. Therefore it may not be out of place to record a few remarks concerning "Emu Eggs" in opening vol. ii. Such remarks are "seasonable," because Emus are now (midwinter) incubating where conditions are favourable in the great interior tracts of our island continent. Formerly, of course, Emus also nested near the sea borders, but now have either been extirpated or driven back by an ever-advancing tide—the tide of civilisation.

Emu eggs, by reason of their size, shape, and colour, are amongst the most beautiful objects in nature. Their size (about 5 inches long by $3\frac{3}{4}$ inches broad) places them with the largest-sized birds' eggs of the world. Their shape is a graceful ellipse, while their colour ranges through the art greens—dark and light. An average weight for an egg when full is about 23 ounces. Deducting 3 ounces for the shell there remain 20 ounces, equivalent to the bulk of 20 ordinary domestic fowls' eggs—not a bad breakfast for a small family. Some persons consider Emu eggs tasteless, but they are really a delicacy. When cooked (fried) the yolk is lightish yellow in colour, and the albumen, although firm, is semi-transparent and does not become opaque white like the common hen's egg.

The nest depicted in the illustration (plate i.) I had the enjoyment and good fortune to photograph some seasons ago when Emu-egging (by permit) in Riverina, N.S.W. How delightful to me are the reminiscences of that winter camp-out, occurring during a succession of calm, cloudless days, succeeded by clear, frosty nights! The winter's day did seem so short. Hardly had the sun risen out of the plain from behind the pine ridges and chased away the cold, grey mist hanging in the red gum tops along the river, ere it seemed to "slope its westering wheel" and sink all too soon behind the box forest, where naked trees, ring-barked, stood silent emblems of death and desolation—a scene rendered additionally weird in its setting of back-lighting. With darkness there set in a freezing temperature and the awesome hush typical of a winter's night in Riverina—a hush that makes one yearn for some sound, however slight, to break the overpowering stillness. Where are the evensongs of the myriads of crickets that cheer the summer tide? Gone, with the great flooded wastes of backwaters from the Wakool and the Neimur of the previous spring—God's bountiful supply that man has wantonly wasted. Is it any wonder that droughts exist?

But to return to the Emu's nest. The photo. has never been previously reproduced, and represents one of six nests I either

found or had the opportunity of examining myself in the open, This nest was most picturesquely situated, protected in front by some dead weatherbeaten branches. Close behind was a small dry box-tree (eucalypt) standing with green suckers sprouting from its base. The nest was simply a flat bed (about 4 feet in length by $2\frac{1}{2}$ feet in breadth, and 2 inches in thickness) composed of dead leaves, grass, and a few feathers of the bird, but chiefly eucalypt leaves, evidently plucked from the branchlets immediately above. What a subdued setting for the circle of eggs of matchless green! There were eight, and a fractured shell. Total, nine, an average clutch.

I think I have somewhere already mentioned that the day will come when the exportation of Emu eggs for commercial purposes will be prohibited. Having due regard for the proper protection of this noble, ornamental, and purely Australian bird, is the time not now ripe for legislation? More national work ahead for the Australasian Ornithologists' Union. There has always been a demand for Emu egg-shells in the great market of the world—London—where thousands of eggs are yearly sent. It is stated on the authority of a Sydney newspaper that in one season a single station hand in Queensland gathered no less than 1,123 Emu eggs, which realized in the local market 12s. per dozen. The majority, no doubt, found their way to London, where they would be worth 5s. or 6s. each.

A Young King Penguin at the Melbourne Zoo.

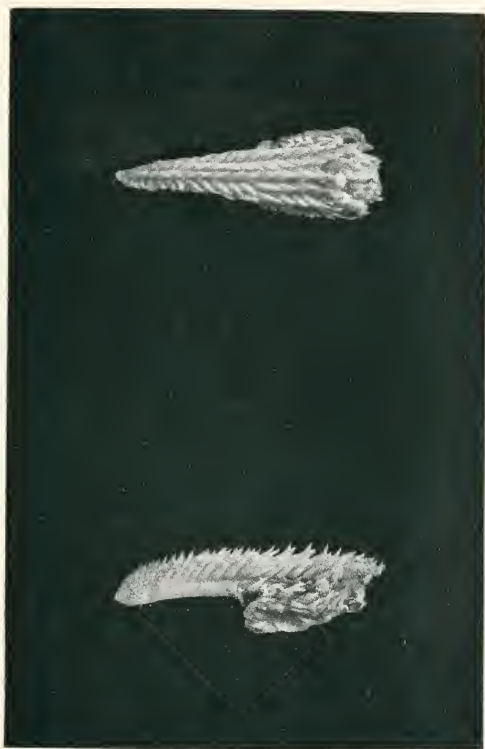
BY D. LE SOUEF, C.M.Z.S., &c.

A SPECIMEN of this interesting species (*Aptenodytes patagonica*), about six months old, was secured by Captain Douglas, of the s.s. *Damascus*, when visiting the Crozet Islands in the southern seas in search of some supposed castaways. The bird is covered with very dense soft down, of a dark greyish-brown. The beak is black, and measures 3 inches in length from the gape and 2 inches from the forehead. The tongue is very curious, being white in colour and almost round, and on the upper surface has three rows from near the point and four rows from half-way down of soft white spines, inclining backwards, and they extend to the back of the entrance to the windpipe. The tongue is .25 inch in thickness, and the spines the same length. The sides of the roof of the mouth have also serrations about the same size, and a row of serrations on each inner side of the lower beak, so that when the tongue is pressed down the rows of serrations are in contact with it on each side. Those towards the front are white, but the hinder ones darker. The length of wing is 11 inches, and length of the leg from the thigh joint



Young King Penguin.

FROM A PHOTO. BY D. LE SOUEF.



Tongue (top and side view) of the King Penguin.

12½ inches. The length of the foot is 6 inches, and its breadth 2 inches. The feet and toes are black, and the under surface of the foot deeply serrated, evidently to prevent the bird from slipping on the smooth, wet rocks or ice. There are three long toes and one small one, half an inch in length, on the upper inner side, just at the commencement of the toes, and which is practically useless. The tail feathers are about 2½ inches long, and are strong and bristly and light bluish at the tip, the rest being dark. A few feathers are also sprouting, principally above the tail, about an inch long, and are also light blue at the end. From the tip of almost each of the segments of these young feathers a thread of down springs, to the length of 1¾ inches. The down from the end segments of the new feathers is mostly intact, but the barbules from the lower ones are not so numerous, having either been broken off through abrasion or possibly not having grown. On the feather I have before me there are 32 filaments of down, but they vary in the different feathers. The eyes are dark brown, and the birds are able to partially protect them with a transparent covering, which they can close over the eye from the front under the eyelid. They frequently seem to do it—sometimes right over, and at other times half-way. The ears are large, with an almost circular patch of dark bare skin round them, on a level with but 1½ inches back from the gape. The total length of the bird, from the tip of the beak to the end of the tail, is 2 feet 2 inches.

Young "Kings" in captivity are very sociable, often following anyone about who may be near, having no fear of man. They are often silent when by themselves, but on seeing anyone approaching at once keep uttering their squeaky, high-pitched note, and moving their heads freely about, possibly expecting food. They have various ways of resting. Occasionally they will lie flat down, but generally stand up, sometimes bending forward until their head rests against their body about half-way down; at other times they just bend their head over until it rests on the upper portion of their body, either on the front or on the side—it seems immaterial which—and so go to sleep. They never seem to duck their head under their scanty wing. The least unusual sound will quickly wake them.

Stray Feathers.

A LAUNCESTON NOTE.—During the first week in February Starlings appeared for the first time in our and several other gardens in Launceston. In all probability they came from the flocks down the West Tamar district. English Skylarks, which until lately could be heard every morning at Invermay, a suburb of Launceston, have been all destroyed by "pot-hunters."—FRANK M. LITTLER. 10/3/02.

RED-CAPPED ROBIN IN NORTH QUEENSLAND.—Mr. Fred. L. Berney, at Richmond, about the beginning of April, shot for identification a female Red-capped Robin (*Petrarca goodenovi*), a species not previously recorded for Northern Queensland.

* * *

A FIGHTING FLYCATCHER.—A little *Rhipidura tricolor* has been fighting his own shadow at the windows from end of November to middle of March. We think he has since died of starvation, as he waxed thinner and thinner daily, and never went away to get a decent meal.—S. B. 2/4/02.

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BUTCHER-BIRDS v. DRAGON-FLIES.—At Easter, during a duck-shooting excursion, I noticed a Butcher-Bird feeding on Dragon-flies that were flying over water. The bird seemed to be an expert at the game, for he never missed one at which he darted.—LANCE LE SOUEF, South Perth, W.A.

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A LATE BROOD OF QUAIL.—Mr. A. Mattingley found, on the 21st April, in the Alexandra district, Upper Goulburn River (Vic.), a nest of Brown Quail (*Synacus australis*) containing 10 chicks not long hatched. He also observed several immature Quails on the same date.

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A FORSAKEN ROOKERY.—*Re* Mutton-Birds at Sorrento, I found an old rookery on the Cape Schanck side, that had been deserted many years, and only bones of the birds scattered about it. The Crown Ranger told Mr. Mattingley, sen., that none of these birds has nested on the mainland for the past 10 years, as the foxes killed them all, and he used to find scores lying about on the old rookery with their heads bitten off. I also went well over the Portsea side, but saw no signs.—D. LE SOUEF.

* * *

NIDIFICATION OF WHITE-TAILED COCKATOO.—Mr. Bruce Leake mentions that in the three nests of this Cockatoo (*Calyptorhynchus baudini*) he has found in Western Australia, in every case one of the eggs was a good deal more advanced in incubation than the other. A reference to the same subject has been made in Mr. Campbell's book, "Nests and Eggs of Australian Birds," p. 605, showing that Black Cockatoos generally lay their second egg a week after the other, which will quite account for the difference in incubation.—D. LE SOUEF.

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HERBERT RIVER (N.Q.) NOTES.—*Black-headed Pardalote*.—On 30th of April last, while walking close to the edge of a

shallow, open well in sandy soil, I disturbed a Pardalote (*P. melanocephalus*) from its nest. On digging the nest out I found two eggs, both considerably incubated. Surely April is a curious time to breed.

Dacelo leachii as a Poultry Thief.—This bird bears a rather evil reputation in this district as a chicken-stealer. That it does kill and eat chickens in considerable numbers there is no doubt, for the residents here agree in considering it as bad as a hawk. It deals with chickens just as with lizards, &c., pouncing on and carrying them off to a neighbouring tree, where, after knocking their brains out against a limb, it swallows them whole. The great Kingfisher often seizes the chicks in spite of a brave resistance on the part of the mother. Only small chickens, up to about two or three weeks old, are taken. This bad habit of an otherwise harmless and useful bird will probably lead to the destruction of a large number, the *Birds Protection Act* notwithstanding.

A Singular Nesting Site.—A few days ago I found a nest of the Crimson Finch (*Neochmia phaëton*) in a curious position. It was placed in the thatch of a grass-built hut, just below the edge of the roof and close to the door, the hut at the time being occupied by some Chinamen. It was firmly wedged in, the entrance being scarcely visible, and contained three eggs in a very advanced stage of incubation. Though by far the greater number of these Finches build in this district in the pandanus palms, I have often found their nests in growing sugar-cane, wedged in amongst the dead "trash" which adheres to the stalk. Both the Crimson Finch and the Chestnut-breasted (*Munia castaneithorax*) are at present breeding plentifully, and appear to do so all the year round.—EDGAR H. WEBB. Macknade, N.Q., 12/5/02.

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"THE BITER BIT."—As Mr. Balke, Presbyterian missionary, was travelling from Ailsa to Warracknabeal, his attention was attracted by something rose-coloured rising up and down from the ground. Drawing nearer, he was surprised to find a Hawk (Harrier) with a Rose-breasted Cockatoo attached to it, the Cockatoo having hold of the Hawk by the two legs (thighs). The Hawk tried in vain to "get at" the Cockatoo till it (the Hawk) was completely exhausted. Mr. Balke finished the Hawk with a stick, and as soon as it lay dead the Cockatoo loosed its grip, and, to Mr. Balke's intense surprise, said, "Poor Cockie!" Mr. Balke, acting the "Good Samaritan," took the bird home; but an advertisement brought the rightful owner, who lived several miles from where Mr. Balke came across the fight.—JOSEPH A. HILL. Kewell, Vic., 3/5/02.

EFFECTS OF RABBIT-POISONING ON BIRDS.—Hawks, Ravens, and Magpies, so far as I have observed, do not eat the poison at first hand. Crows, and more rarely Magpies, attack the carcasses, going straight for the stomach, which probably in most cases contains a quantity of unoxysized phosphorus, ready to burn whenever the contents of the stomach are dry enough. The birds get the benefit of this, and succumb. The roosting-places of the Crows are marked by their bodies in the morning, but the Magpies die all over the place. The Hawks seem to act as complete scavengers, except that they leave the digestive organs alone. The Hawks seen about the flats just now are rarely seen at any other season. Fights between Crows and Hawks are common, especially about 6 a.m. Two Crows will attack one Hawk, not very savagely, but just enough to let him know that his presence at a distance is desired. The Hawks generally accompany the Cockatoos (Sulphur-crested), which put an end to sleep anywhere within a mile. I have never seen enough Cockatoos' feathers to lead me to think that the Hawks had killed one. So far as I have noticed, the Cockatoo is pugnacious until fighting begins. I think many of the farmers' friends could be saved from self-destruction if the farmers would bury the rabbits. This could be done to advantage by pushing them into the burrows near at hand. A forked stick is the only tool required, and, as a rule, a round of the paddock after each poisoning will suffice.—JAMES WILSON. Tawonga, Vic.

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WESTERN NOTES.—I bought a young Red-tailed Cockatoo the other day from a man who took it from the nest at Mt. Malcolm. It was a *Calyptorhynchus stellatus*, and died, but I am getting an older one from him, which has lived for some time in captivity. I have a lovely pair of young Kites, I think the Square-tailed. There are a fine lot of Hawks over here. I am nearly certain that I saw a Grey Falcon (*Falco hypoleucus*) a day or two ago. Mr. Hall does not give it as found here. It flew just over my head, with a fine mullet, about 2 lbs., in its claws, and I particularly noted the black centres of the feathers. The Whistling Eagles nest within a couple of miles of the Zoo, and often fly over with fish, and one went last season with a big snake (black, I think). I went shooting the other day, and saw a lot of Emus; they live in very poor country, and seem, from their droppings, to live principally on cranberries, or Emu berries, as they are called over here. On the plains I noted Singing Honey-eaters, and also two other kinds which I couldn't identify; they were miles from water. There are many Bustards up there, and in the jarrah belts many Twenty-eight or Yellow-collared Parrakeets and Red-capped Parrakeets (*Porphyro-*

cephalus spurius). There were few Ducks. I saw the Black Duck, Teal, Hardhead or White-eye (*Nyroca australis*), and Mountain Duck, also a few Southern Stone Plover, and I caught a beautiful Freckled Podargus, but pulled his tail out, so let him go. Bee-eaters, or *Merops*, are very plentiful this season, and they were in trees just over the swamps in numbers. Bitterns were common. One of our party described a pair of wonderful green goose-like birds which he had shot in the lake on a previous visit, 60 miles north of Perth, and there is no doubt but they were a pair of Green Goose-Teal (*Nettopus pulchellus*). Freckled Duck are fairly common over here, and are called "Grey Duck."—E. A. LE SOUËF. 4/2/02.

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A BICYCLE SPIN WITH EMUS.—In some parts of Gippsland there are still a few Emus, which, fortunately being unmolested, are very quiet, and if they happen to be near the road take stock of passers by without moving a feather. Ordinary traffic they are used to, but a man on a bicycle was apparently unknown to some of them. Lately, while cycling at the back of Lake Tyers, near the Nowa Nowa arm, I came suddenly alongside five Emus among the bracken fern. I was moving slowly, by reason of the bad road. The Emus were about 20 paces to the right of the track, and evidently they said, "What manner of 'bird' might this be?" and to my wonder they moved along at my pace for fully a quarter of a mile—I thought there must have been a barbed-wire fence alongside them, but there was not. Having satisfied their curiosity they quickened pace, and with a left wheel made to cross the road about a chain ahead of me. I was on for fun, too, and with a sudden spurt I came quite close to them, and, sitting up, I gave a good colonial yell, which made the big birds fairly "streak" over the road in a hurry. The hindermost one I could almost touch, and in excessive haste the bird came a beautiful "cropper" amongst the logs and ferns. I stopped and looked round. They did likewise. I'm not sure whether they considered my species to be extinct or that perhaps I was "protected." I regretted not having my hand camera, for I certainly could have made an interesting "snap."—J. P. CAMPBELL. Murrumbena, Vic.

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SWIFTS ROOSTING.—Referring to Mr. Le Souëf's note on the migration of Spine-tailed Swifts in the last number of *The Emu*, p. 149, and his inquiry as to whether any member of the Aust. O.U. has observed this bird resting, I am pleased to say that on 8th March last, whilst returning from Mornington in company of Mrs. Shepherd and family, I observed a Swift circling round and round a tall messmate tree (eucalypt) on the public reserve at Somerville. It was just about dusk, and I was convinced that the bird intended roosting in the tree. It

returned several times, each time dashing close to the thick branches near the top of the tree and finally dashed into the thickest mass of leaves, making a rustling noise as though the bird was hardly able to steady itself. It was by this time almost dark, and I remained close to the tree for upwards of 15 minutes, and the bird never left the tree, hence I am certain it roosted there. Since this instance occurred I saw another Swift circling around a tall pine (*P. insignis*), where I have no doubt it rested for the night.—G. E. SHEPHERD. Somerville, Vic.

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PIED CORMORANTS NESTING IN WESTERN PORT.—About 15th March, 1901, my friend Mr. J. Brown noticed Pied Cormorants (*P. hypoleucus*) in large numbers on the east side of French Island. The birds were sitting upon tall mangroves, which had been stripped of leaves and branchlets for the construction of their nests, as many as a dozen of these nests being located in one tree. The nests were about 2 feet across, constructed entirely of the green leaves and small branchlets of the mangroves. At this time the nests were used apparently for roosting purposes, and the young had been reared the previous spring. I suggested that a good look-out be kept the ensuing spring.

About the end of August the birds commenced to repair the old nests with green leaves, and on the 15th September I visited the locality, arriving at midnight with a favourable tide. On pushing the boat among the mangroves the birds flew off the nests in the immediate vicinity, and on examining some dozen nests in one large mangrove about half the number contained one egg apiece. I removed one only, intending to revisit the place again in a week's time. Unfavourable weather prevailed, however, and it was not until the 29th September that I was enabled to again visit the locality, when to my dismay I found the nests deserted, not a bird being visible or an egg to be found. A solitary Raven was seen leaving the spot with an egg in its beak, evidently taking it off to its nest in the timber near. The fact of these birds nesting in this locality is somewhat remarkable, as the oldest local residents or fishermen have never seen them nesting previously in any part of Western Port Bay. Possibly some of the fishermen had visited the rookery between the date of our first and second visits, and from ignorance, no doubt, shot some of the birds, frightening the balance away. I saw one dead bird hanging from one of the mangroves in which some of the nests were situated. The rookery contained about 150 nests altogether, the largest mangroves only being utilized as nesting sites, and the trees favoured were quite denuded of foliage.—G. E. SHEPHERD. Somerville.

MARSH TERNS AND GREBES.—Of recent years the Marsh Tern (*Hydrochelidon hybrida*) has been a regular visitor to the Geelong district, haunting, during late spring and summer, the lower reaches of the Barwon River and the wide, weed-grown shallows of Lake Reedy, a marsh of some thousands of acres on the north side of the river. Twice in past seasons I had spent half a day in vain attempts to find the chosen nesting-spot of the hundreds of dusky, fairy-like birds that hawked constantly overhead. This season (1901) I was successful. The 15th December was a warm day, making it pleasant to wade in, through the cool water and long green flowering plants of the marsh, towards the centre, where the birds hovered thickest; but the birds dispersed and I found nothing, and so turned to the right, in continuance of the circular route that I was following. In half an hour I was three-parts back to the starting-point, and had given up the search, when my eye was caught by something white on top of the water among the short reeds in front. I walked over, and picked up a dead Tern. It was lying across a nest platform with broken egg-shells on it. A few yards away were another nest and more shells, then another and another, till I had found 40 or more, all with the beautiful mottled litter of broken shells in or around them, save one, which held dead young. The birds had flown from the rest. The nests were built up from the bottom in water about 2 feet deep, the upper part formed of dry stalks of slender reeds. On the outside edge of the colony I was surprised to discover a nest of the Hoary-headed Grebe (*Podiceps nestor*) with three fresh eggs—doubly surprised, because I had not seen a Grebe all the afternoon, and because it was the first time I had ever observed any trace of this bird in the district. Five minutes later I found myself traversing a second and smaller group of empty nests of the Marsh Tern; and in its centre, not 10 feet from each other, were two more Hoary-headed Grebes' nests, one with three eggs and one with four. A fourth, further away, had only broken shells. The nests were more roughly made than the Terns', being composed of water-weeds thickly piled together, and wet through from top to bottom. These Grebes must be very cunning birds, for not so much as a ripple in the quiet water did I see for sign of their presence, and yet the eggs were fresh, showing by their varying shades from dirty white to brown the order of their laying. Where the birds were hiding I could not guess, but I wondered at their craft in this respect and at the love of company—or is it a feeling of "safety in numbers?"—that makes them consort thus at nesting-time with the Terns.

—C. F. BELCHER. Geelong.

From Magazines, &c.

The Journal of Agriculture (Victoria).—To interest and instruct people about the birds, especially the useful ones, of their own country is a better aid to the protection of these birds than many Acts of Parliament. Therefore the Victorian *Journal of Agriculture* is to be commended for commencing a series of short articles on the "Insectivorous Birds of Victoria." It is a matter for congratulation that Mr. D. M'Alpine, F.C.S., a member of the Aust. O.U., and an enthusiastic worker in many departments of science, has been appointed editor. The bird articles are by Mr. Charles French, F.L.S., &c., Government Entomologist, and the coloured illustrations are from drawings by Mr. C. C. Brittlebank. The February issue (vol. i., part 2) deals with the Kestrel (*Cerchneis cenchroides*) and the Bee-eater (*Merops ornatus*). Regarding the former Mr. French states:—"I have adhered to the generic name known to most of us as *Tinnunculus*, believing as I do that finality in nomenclature is not a thing of the near future." If Mr. French believes that the retention of old and obsolete names is an advantage, it may also be advantageous to show in brackets the later (really the older by the law of priority) and more accepted names. The April number (part 4) deals with that little, gay favourite, the Blue Wren (*Malurus cyaneus*). The lithographer has very obviously not done justice to the colour of the original drawing of the male bird. Moreover, had its tail been drawn more obliquely the figure would have appeared more natural, besides saving a repetition of the pose of the upper (female) figure.

The inclusion in the advertisements in the *Journal of Agriculture* of the schedule of the "Close Season for Game" is a wise forethought. No use now for country "pot-hunters" to say "'Tis folly to be wise," &c. It will be rank folly to be ignorant and shoot protected birds during close season.

* * *

IN *The Wombat*, the journal of the Geelong Field Naturalists' Club, &c. (March, 1902), Mr. H. E. Hill contributes an article entitled "Notes on the Birds of the Bendigo District." He enumerates about 100 birds which came under his own personal observation, giving field data, more or less brief, and of much interest, because original. The following are samples:—

Pomatorhinus superciliosus.—4/11/99. Nest with six eggs in needle bush (hakea), of which three were fresh and three dried up. Do the Chatterers line those nests only which are to contain eggs?

Gymnorhina leuconota.—20/10/94. Watched a fight between two cock birds, a hen looking on from a safe distance without apparent concern as to the result.

Oreica cristata.—10/9/98. Nest at Bullock Creek with two fresh eggs. Two or three caterpillars in nest unable to move.

Acanthorhynchus tenuirostris.—The Spinebill makes its first appearance in town about March, and I think it clears out again before nesting.

Melithreptus lunulatus.—31/8/95. Strathfieldsaye. Came across a great flock of Lunulated (White-naped) Honey-eaters, which must have been several hundreds strong.

Ptilotis auricomis.—Remarkably abundant both in town and bush.

16/10/97. Nest with two unfledged young in hakea. Bird does not leave till I am looking right into nest, when it jumps hurriedly out and tries to draw me off by the old dodge of feigning to be hurt.

Halcyon sanctus.—In a bank of a gully I found a tunnel, which I thought belonged to a Pardalote, and while I was digging it out a Sacred Kingfisher suddenly appeared, in a state of great agitation. On digging further I caught sight of the eggs, with the other bird crouched behind them, apparently in great fear. As she (it was probably the female) would not leave the nest, I had to put my hand in and lift her out, when she came without a struggle, and lay quite still in my hand for a moment before endeavouring to escape. The nest contained five fresh eggs on the bare earth.

Glossopsittacus concinnus, &c.—Very common in some years when the gums are blossoming. They usually arrive about Easter.

Chenopsis atrata.—22/4/99. A wild Black Swan has joined the tame one on Lake Neangar, Eaglehawk.

* * *

THE *Victorian Naturalist* is to the fore again in bird matters. In the March number (vol. xvii., p. 11), Mr. G. A. Kearland contributes a paper, "Amongst the Birds in Riverina," in which he records the field observations made by himself and Messrs. C. C. and T. A. Brittlebank in Eastern Riverina during the previous September. One of the special objects of this pleasant excursion appears to have been to obtain information of the nidification of the handsome Green-Leek or the Barraband Parrakeet. The party has certainly been successful in this respect, for it either found or obtained complete data of 14 nests, each containing six eggs. Possibly such regular and large clutches may be attributed to an exceedingly favourable season. In "The Breeding of the Barraband Parrakeet" at the Micklefield Vicarage, England, mentioned in *The Avicultural Magazine* (vol. vi., p. 217, 1900) the number of eggs to the clutch is not stated, but "three young were hatched."

One of the surprises of the trip was the finding of the Osprey (*Pandion*) so far from its natural haunts—the sea coast. Had it been the Sea-Eagle (*Haliaeetus*), which in immature plumage much resembles the Osprey, ornithologists would not have been astonished, because the Sea-Eagle is known to frequent and has been shot in Riverina.

The same issue of the *Naturalist* contains an article by Mr. Robert Hall, which is concluded in the following (April) number, entitled, "Among the Birds of Western Australia."

Mr. Hall relates observations in a popular manner on the "feathered friends" that came under his notice during an ornithological trip undertaken at the end of 1899 in the great western territory, including a brief stay on the historical shoals, Houtman's Abrolhos. When he penned his interesting observations, descriptions of the birds and their habits, he was evidently in his best vein. Mr. Hall, writing apparently only from second-hand information, mentions a small island at the entrance of Denmark River, about 40 miles from King George's Sound, where the Wedge-tailed Petrels (*Puffinus chlororhynchus*) had prepared their burrows for laying in November. Possibly the species of Petrel is the Fleshy-footed (*P. carneipes*), which is known to breed on Breaksea Island, at the entrance of the Sound. The Wedge-tailed Petrel has hitherto never been found breeding further south on the western coast than Rottnest Island, off Fremantle.

Although the field naturalist always walks abroad on the tip-toe of expectation, the unexpected frequently turns up. Who would have thought of finding on the coral shoals of the Abrolhos a Green-backed White-eye nesting in the pigface weed? A solitary Red-capped Robin was also noticed out there. No wonder it "looked disconsolate."

The more critical and technical notes of Mr. Hall's work on this Western trip are appearing in *The Ibis*, and will be duly noticed when concluded.

* * *

Agricultural Gazette of New South Wales.—Part 4 of vol. xiii. (April, 1902) contains a coloured plate of *Chalcococcyx plagosus* (Lath.), the Bronze Cuckoo, as an accompaniment to Mr. A. J. North's fifth paper on "The Insectivorous Birds of New South Wales." Notes on this bird are given, as also on the Black-eared and "Rufous-tailed" Cuckoos. The Channel-bill and Koel are also alluded to. These papers are published as contributions from the Australian Museum, and this is possibly the reason why, as a sort of appendix, Mr. North gives a lengthy description (illustrated) of the egg of the Fawn-breasted Bower-bird (*Chlamydodera cerviniventris*), which had been previously described by him in 1886. He also describes something far newer—two eggs of the Varied Lorikeet (*Ptilosclera versicolor*), received by Mr. G. A. Keartland from the junction of the Fitzroy and Margaret Rivers (collected 6/5/01). "The nesting-place was in the spout of a gum-tree, about 30 feet from the ground, and the eggs, which were quite fresh, were deposited on the dry, decayed wood, about 18 inches from the entrance. The eggs are swollen ellipse in form, pure white, the shell being close-grained, dull, and lustreless. Length:—(a) .91 x .76 inch; (b) .93 x .73 inch." Up till quite recently these eggs were classed as "undescribed."

SEVERAL booklets have been received from Mr. Harry C. Oberholser, Assistant Biologist in the Agricultural Department, Washington, U.S.A.

To Australasian ornithologists one is of particular interest. It is a paper on "Some Untenable Names in Ornithology," forming part of the "Proceedings of the Academy of Natural Science of Philadelphia," March, 1899. They relate principally to generic terms, of which four are Australian, as follows:—

Amytis, Lesson, is untenable by reason of *Amytis*, Savigny, proposed for a genus of Vermes. *Diaphorillas* is substituted.

Xerophila, Gould, must be displaced on account of *Xerophila*, Held, a genus of Molluscs. *Aphelocephala* is substituted.

Stictoptera, Reichenbach, is untenable by reason of *Stictoptera*, Guenée, for a group of Lepidoptera. It is replaced by *Stizoptera*.

Calornis, Gray, is debarred by *Calornis*, Billberg, for a genus of Lepidoptera. *Lamprocorax*, Bonaparte, is substituted.

* * *

The Bulletin of the British Ornithologists' Club (No. 86) records the eighty-fifth meeting of this club (the inner circle, so to speak, of the B.O.U.), which took place at the Restaurant Frascati, 32 Oxford-street, London, on the 19th February, 1902. The chairman, Dr. P. L. Sclater, F.R.S., exhibited nine skins of new or rare Australian birds, and offered the following critical remarks:—

Ptilotis keartlandi, North.—This handsome species was first described by Mr. North (*Ibis*, 1895, p. 340) from specimens collected during the "Horn" Expedition to Central Australia. Examples have also been recently obtained in the vicinity of North-West Cape (see Campbell's "Nests and Eggs of Australian Birds," p. 402). The pair which I now exhibit was procured at Derby, North-West Australia, and sent to me by Mr. Hall.

Ptilotis leilawalensis, North.—The history of this recent addition to the Australian avifauna will be found in Mr. Campbell's new book on the "Nests and Eggs of Australian Birds," p. 405. The present specimen was obtained at Cardabia Creek, N.W. Australia, on 25th March, 1899, by Mr. Tom Carter, and has been sent to me by Mr. Hall.

Mirafra woodwardi, Milligan (*Vict. Nat.*, xviii., p. 25).—Mr. Hall sends me a single specimen of this *Mirafra* obtained at Derby, Western Australia, on the 24th August, 1900. The describer appears to be correct in recognizing this as a new species of Australian Lark, differing from *M. horsfieldi* in the larger size and more rufous plumage. There is an example of it in the British Museum, from Port Essington, North Australia, received from the Gould Collection, and registered as *M. horsfieldi* (Cat. B., xiii., p. 604, specimen 1). The South Australian *M. secunda*, Sharpe (Cat. B., xiii., p. 603), is also a close ally of this species, but is smaller in size and less distinctly striped on the neck.

Pseudogerygone tenebrosa, Hall (*Vict. Nat.*, xviii., p. 79).—This appears to be a valid species. I can find nothing like it in the National Collection. The specimen is from Derby, North-West Australia.

Eremiornis carteri, North (*Vict. Nat.*, xvii., pp. 78, 93, 1900).—Mr. North kindly sends me an example of this supposed new genus and species of Australian birds. The genus is closely allied to *Schanicola* of India (Cat. B., vii., p. 110), and perhaps hardly distinct; but the specimen is not

in very good condition, and I am unable to decide definitely upon it. It is at any rate a new species, and a most interesting addition to the Australian avifauna.

Platycercus macgillivrayi, North.—Mr. North has also kindly sent me a specimen of this decidedly new Parrakeet from the Burke District of Northern Queensland, which he has lately described in the *Victorian Naturalist* (xvii., pp. 91, 113). The sex is not recorded, but from Mr. North's description I suppose it to be a female. It was obtained at Cloncurry, near Normanton. The species belongs to the group of *P. barnardi*, which, however, I am not inclined to separate generically from *Platycercus*.

* * *

THE interest pertaining to the formation of an Australasian Ornithologists' Union has been far-reaching. Of his own volition, that distinguished *savant* Dr. Paul Leverkühn, Director of the Scientific Institute and Library of His Royal Highness the Prince of Bulgaria, has been good enough to send a letter, dated "Palace of Sophia, 6th March, 1902," conveying "sincere wishes to your brethren ornithologists," &c., together with a budget of papers and pamphlets, chiefly from his own pen. Among these may be mentioned—"Ornithological Excursions," "A Journey to Finland," "The Hoopoe" (Natural History of the Birds in Middle Europe); an ornithological monthly journal, edited by the German Association for the Protection of Birds—contents of the second 12 years; "Protection of Birds in England," "The English Sparrow in North America," "List of Books of the Ornithological Society of Munich;" *Oologié*, an international organ for the promotion of this science; *Ornithologié*, besides twenty-five other papers of more or less interest.

Reviews.

CATALOGUE OF BIRDS' EGGS.

[*"Catalogue of the Collection of Birds' Eggs in the British Museum (Natural History). Vol. i.—Ratitæ. Carinatae (Tinamiformes—Lariformes)."* By Eugene W. Oates. London: Printed by order of the Trustees, 1901. 8vo, pp. i.-xxiii., 1-252.]

PERSONS who imagine that collecting birds' eggs is a pastime on a par with the acquisition of obliterated postage stamps will be surprised to find that so great an institution as the British Museum has a collection exceeding 50,000 specimens in its charge, and considers this branch of ornithology of sufficient importance to devote a special descriptive catalogue to its oological collection. The first volume of this work has just been issued, under the direction of Dr. Ray Lankester, and deals with 520 species belonging to the *Ratitæ* and *Carinatae*, which, as the preface states, is "about one-third of the total number of living or recently extinct birds" enumerated

in the "Hand-List" as included in those sub-classes, which embrace Emu, Cassowary, Mallee Fowl, &c.; Quails, Pigeons, Rails, Grebes, Penguins, Petrels, and Albatrosses; Terns, Gulls, &c. About 100 of the species described are Australian.

Ten years ago the whole of the Museum's collection was arranged and labelled by Miss Emily Sharpe, under the supervision of her father (Dr. Bowdler Sharpe) and the late Mr. Henry Seebohm. The present catalogue is the work of Mr. E. W. Oates, known to Australian ornithologists as the editor of the second edition of Hume's "Nests and Eggs of Indian Birds," and as the author of the earlier volumes of the "Aves" in the "Fauna of British India." Dr. Lankester says Mr. Oates "has performed his work conscientiously," which means much, and every student of the volume will consider this well-deserved praise.

The author has followed the classification and nomenclature of Dr. Sharpe's "Hand-List of the Genera and Species of Birds"—*i.e.*, commencing with the *Ratitæ* (Emu, &c.) instead of ending with them, and in the arrangement of his matter has made the book what a "classic" should be. Each technical name and its authority stand out clearly; synonyms and sufficient references follow, the latter including invariably the "Catalogue of Birds in the British Museum" and the "Hand-List" previously mentioned. Then follows a concise description of shape and colour of the eggs, with dimensions in inches, succeeded by numbers, localities, &c., of the originals. In addition to the specific description, an admirable practice has been adopted of giving a general one, or "family likeness," of the eggs as a heading to each order.

At the end of the volume 18 plates are given, depicting in colour lithography 134 species of eggs. These are the special work of Messrs. Pawson and Brailsford, Sheffield, from drawings by Mr. H. Gronvold, and, if anything, exceed in excellence former good work by that firm. The selection of a rough-grained paper has been the means of imparting to the pictures of the larger eggs a *vraisemblance* to the superficial (pitted) appearance of the natural shell, which is usually lacking in a delineation of such an object. The only fault is in Plate I., in which the too-pronounced "high lights" detract from its beauty from an artistic standpoint.

Australians will naturally turn first to the history and descriptions of the eggs of their own birds, and Mr. Oates records that the first acquisition of a collection of these by the British Museum was made in 1856, when Sir D. Cooper presented a small assortment. In 1881 Gould's historical collection of Australian and European eggs was acquired. More recently (1891) some eggs, chiefly of sea-birds taken in North-West Australia by Mr. J. J. Walker during the

voyage of H.M.S. *Penguin*, were presented by the Admiralty; and in 1893 Mr. F. A. Philbrick, Q.C., donated a collection made by his son, principally in Gippsland. Mr. Donald Mackintosh, of Victoria (who, although not strictly an ornithologist, is nevertheless a famous "bird collector"), on the occasion of his pigeon-shooting trip to the Old World in 1900, gave a small collection of the eggs of his native country. By no means the least valuable were the rare specimens presented the same year by our fellow-member of the Aust. O.U., the well-known Queensland collector, Mr. C. A. Barnard, while Mr. E. S. Moulden, of Adelaide, is also credited with interesting specimens.

Individualizing more critically some of the Australian species, there are several points worth drawing attention to. It will be noticed that under "Emu" (p. 5), two eggs are recorded as presentations (respectively by Sir T. Davenport and Dr. Milligen) from Tasmania. If they were really collected on that island before the extirpation of the species there they are indeed notable relics, besides possessing a value in that the species was possibly distinct from the mainland bird, as the Kangaroo Island species was.

Mr. Oates has kept the Australian Swamp-Quails under the one species, *Synacus australis*. But in describing the eggs he states that the specimen from Tasmania is "fully twice the size of any other egg of this species in the collection." Surely, if oology counts for anything, this is expert evidence that there is a larger-sized Swamp-Quail in Tasmania (and adjacent parts), which field ornithologists have always held to be distinct from the common kind.

It appears that the egg of the Chestnut-backed (Bustard) Quail (*Turnix castanonota*) was figured half a century ago in *Fortpflanz. ges. Vög.*, tab. xii. (Thienemann), although some writers have stated it to be "undescribed."* It is strange that Gould did not describe these eggs, seeing there were seven in his collection, with data "Port Essington, N. Australia," probably collected by Gilbert. It is a pity it did not occur to Mr. Oates to figure one of these specimens, which, he says, "are quite different from those of all the other species of this group," instead of that of the familiar *Turnix velox*, more particularly as the figures are, with few exceptions, those of eggs not previously delineated. The previous figure, being buried in an old German publication, is not available to the majority of readers, and was virtually unknown.

Mr. Oates will certainly popularise the "Catalogue of Birds' Eggs" by the free use of vernacular names of birds in his de-

* A footnote in "Nests and Eggs of Australian Birds," Campbell (1900), gives a provisional description. This has been fully established as correct by the description of eggs from the same locality in the work under review.

scriptive matter ; but, although it is difficult to say where a Dove ends and a Pigeon begins, Australians will probably never learn to call *all* the Bronzewings *Doves*. Exception must be taken to the statement (page 80) that "there can be little doubt that the eggs of all Pigeons are white when first laid." When Mr. Oates has had the pleasure of examining the eggs of *Chalcophaps*, *Geophaps*, *Lophophaps*, &c., he will no doubt observe that the shells possess a very decided light creamy tint or tone.

The two eggs from New South Wales, described as pertaining to *Gallinula tenebrosa*, are not typical, if they belong to that species at all. They should have a stony colour, not creamy-white. Moreover, the dimensions are much too small. However, Mr. Oates may enjoy the comfortable reflection that he has been in very good company, and has not been the first author to go astray over the Gallinule's eggs from New South Wales.

The description of the egg of the Cape Petrel (*Daption capensis*) may stand as a provisional one till authenticated examples come to hand. One or other of the Antarctic exploration vessels now out will doubtless fall in with a rookery of these most interesting Petrels.

Students and collectors generally will look forward expectantly to the completion of the volumes, comprising a most interesting and valuable work of reference.

* * *

IN THE SOUDAN.

[“Bird-Hunting on the White Nile: a Naturalist's Experiences in the Soudan.” By Harry F. Witherby, F.Z.S., &c. London: The office of *Knowledge*, 1902. 8vo, pp. 1-117.]

IN the reprint from *Knowledge* entitled “Bird-Hunting on the White Nile,” Mr. Witherby describes his experiences on an ornithological expedition as far south as El-Kawa, some 150 miles beyond Khartoum. The habits of people and birds are depicted both by pen and camera, and the difficulties which beset such a journey are most interestingly portrayed. The trip “was made during the driest months of a very dry year,” which is said by the author to be in one sense a favourable time, there being very few visitors then. Seventy birds and 17 mammals are listed as collected and observed, but it is noted that 141 species were identified, of which only four are recorded as nesting. The latter included a small Lark (*Pyrrhuloxia* *otoleuca*, Temm.), two Doves (*Turtur ambiguus*, Boc., and *Oena capensis*, Linn.), and the smallest of the many Shrikes found (*Nilaus afer*, Lath.) Birds seem to have been plentiful all along the river, but the only one new to science was a tiny Fantail Warbler (*Cisticola aridula*, Witherby). Two rare species were, however, secured—a Horned Owl (*Scops leucates*, Temm.), and a Goatsucker (*Caprimulgus eximius*, Temm.)

Besides being in "a country of dense bushes and tame birds," where the temperature ranged from 110° to 115° in the shade during the warm portions of the day, and having surroundings only of thorny acacia bushes and sand, there were many difficulties beyond sandstorms of several varieties to overcome. One was the way in which birds worked against the collector, by some common one alarming the rarer kinds; another was their skill in hiding. The author says:—

"The birds living among the trees depended upon the thickness of the branches and twigs for concealment, and although there were few trees with leaves, it was extraordinary how perfect a protection they were afforded. Even the most brightly coloured birds were hidden in a thick mimosa bush or acacia tree, and rather than fly away would retire into the thickest part of a tree. . . . I heard a shrill note coming from the middle of a bush which was composed of thin and wiry green shoots, leafless, but so interlaced that the birds were perfectly hidden. I kicked the bush, but the birds would not budge. I walked all round it several times, but the birds only travelled round to the opposite side."

One needs to be an enthusiast in such a quest as Mr. Witherby had. An extract from his book will show not only that he has written in a popular rather than a scientific style, but that his heart was in his work. It will also perhaps induce the reader to do what is worth doing, peruse the book for himself:—

"On one of our last evenings of camp life I was trying to shoot some small bats that were flitting round the tents. . . . As I was standing there a hawk-like bird appeared like a ghost from over the river. As it passed me I raised my gun mechanically and fired, but the bird went on and in ten yards or so was out of sight. I thought no more about it, as my gun was loaded with dust shot, and the bird seemed large and some distance off. Tiring at length of shooting by moonlight, I returned to the camp, and, calling for a lantern, went to search for the bat at the place I had marked with a heap of mud. As the light flashed on the spot, there lying dead with outspread wings was the glorious golden Goatsucker. I picked it up and rushed madly to my companions. . . . I often dream of a broad river flowing through a desert land lit by the bright moon; of a ghost-like form and a chance shot; then I see a stately Arab bearing a lantern, and suddenly the light flashes upon a glorious bird shining like burnished gold all spread out upon the sand."

Report on Mutton-Bird (*Puffinus tenuirostris*) Rookeries, Phillip Island.*

Melbourne, 11th April, 1902.

To the Council, Australasian Ornithologists' Union.

I BEG to report that on the 29th, 30th, and 31st March, accompanied by Messrs. A. P. and J. F. Smith, who have been acquainted with the locality from childhood, I visited and

* In view of members of the next Congress of the Aust. O.U. visiting the rookeries on Phillip Island during the eggng season in November, and thereafter to formulate some scheme for the protection of Mutton-Birds, not only on that island but in other localities in Bass Strait, &c., if necessary, it occurred to the Council it would be as well to possess some evidence as to the state of the rookeries during the "birding"

inspected six of the seven Mutton-Bird rookeries on Phillip Island.

The rookery not inspected was the large one on Cape Wollomai. Its condition and extent are well known. Moreover, it is probable that the Council of the Aust. O.U. will officially visit the locality next November, when the numerous eggers will be at work. The remaining rookeries visited (commencing next to Wollomai and following round the island) were :—

(1.) *The Narrows Rookery*.—This rookery is about half a mile in extent, and is situated on the sand dunes on the Back Beach, the burrows being chiefly on the tops and on the inland sides of the dunes. The locality was full of young birds in a thriving condition. Judging by those examined they would be ready to take the sea in about a fortnight or three weeks. Some parts of the rookery are scrub-covered, other portions have coarse grass.

(2.) *Murray's Rookery* is near the Narrows, a little further to the westward. It is about a quarter of a mile in length, and is more open than the Narrows, nevertheless birds were found fairly numerous. Both Murray's and the Narrows may be said to be in good order.

(3.) *Red Cliff Rookery*.—This place, being on the top of a naked bluff, is somewhat exposed, and is situated about half-way between Murray's and the Nobby. There were formerly about two acres of burrows, now mostly deserted. Only a few nests contained young. Owing to the shallowness of the burrows and easy access to the locality (only six miles by a good road from the township of Cowes) this rookery has evidently been much depleted by egg-gatherers and birding parties.

(4.) *Nobby Rookery*.—This is a small rookery on the summit of an islet at the south-west end of Phillip Island, and is almost depleted of Mutton-Birds. The burrows being very shallow, the eggs or young are easily taken. I noticed only two or three young in their nests, while a carcass of one recently killed, evidently by a cat, was lying in the open.

(5.) *Flynn's Rookery* is situated near the Inner Beach, on the sand dunes, between a small lagoon and the strand. Its extent is about a quarter of a mile. Birds were numerous, being well protected in deep burrows under a secure covert of rushes, "sword grass," bracken, and other coarse vegetation.

(6.) *M'Haffie's Rookery* is similar in size and extent to Flynn's and is situated about half a mile further eastward. This rookery is also in an apparently flourishing condition, well covered with

season. Consequently, Messrs. A. J. Campbell and Robert Hall were deputed to visit, during the autumn, some of the rookeries when the young were in the burrows, and to report accordingly. At the last moment Mr. Hall was unable to proceed.—A. J. C.

scrub—leptospermum, acacia, "blue bush," &c., besides grass, &c.

From the foregoing remarks it will be noticed that all the rookeries are in good and natural condition except the small ones on Red Cliff and the Nobby respectively. Although the season was ripe for birding parties for oil, food, &c., I did not hear of any being at work. The chief traffic in connection with the birds is evidently during egg-gathering season. The idea of registering names and addresses of egg-gatherers might be tried as an experiment the ensuing season. No doubt Mr. C. W. Maclean, Chief Inspector of Fisheries, who administers the *Game Act* (and to whom I have forwarded a similar report to this), will take action in the matter, and cause some arrangements to be made for taking the census of egg-gatherers, with a view of ascertaining, and, if necessary, regulating the traffic.*

I cannot close this report without expressing my indebtedness to the brothers Smith for their very willing assistance to me while inspecting the various rookeries.—ARCHD. J. CAMPBELL.

Better Protection for Victorian Birds.

"HISTORY repeats itself." Some years ago the Field Naturalists' Club of Victoria bestirred itself in the matter of the better protection of our useful and ornamental indigenous birds.† The Commissioner of the day, who administered the *Game Act*, was interviewed by deputation, with the result that the schedule of protected birds was considerably augmented, and took nearly its present form.

With the experience of 17 years, and some of the species still decreasing in number, the Club has moved again, appointing as a sub-committee Messrs. G. A. Keartland, D. Le Souëf, and Robert Hall—by the way, all members of the Aust. O.U.—to bring up recommendations. Judging by the report (*vide Naturalist*, pp. 5-7, May, 1902) the sub-committee must have worked most assiduously, especially Mr. Keartland, upon whom devolved all the secretarial work.

The following are the amendments proposed to close seasons on the present schedule:—

* Mr. Maclean has already moved in the matter, and upon his recommendation the Minister of Public Works by proclamation will close the Red Cliff and Nobby rookeries for four years from September next. Notice boards to that effect will be erected at the landing and other places on the island. Notices will also be posted requiring egg-gatherers to the "open" rookeries to register their names and addresses. Mr. A. P. Smith, Cowes, has been appointed an Assistant Inspector under the Act to see these regulations carried out locally.—A. J. C.

† See "The Protection of Our Native Birds," *Victorian Naturalist*, vol. i., p. 161 (Feb., 1885), and *Southern Science Record*, vol. i. (New Series), p. 57 (March, 1885).

The whole year.—Acanthizæ or Tits (all species) and Babblers (all species) are added in addition to those already partially protected—namely, all birds known as Cranes or Herons, Coachwhip-Bird, Cuckoos, Larks, Nightjars, Shrike-Tit, Sittellas, Swamp or Ground Parrakeet, Thickheads, Thrushes, Tree-Creepers, Wedge-bill, and Wood-Swallows.

From the first day of August.—Teal and Wild Ducks of any species to be extended *to the last day of January.*

From the first day of August.—Quails, Bronze-winged and other Wild Pigeons, to be extended *to the last day of March.*

Ibises are to be removed from *the whole year* to a partial protection. This is a questionable step, seeing how extremely useful Ibises are. The Mallee Hen remains only partially protected. This most interesting bird should undoubtedly enjoy *the whole year.*

In the matter of nomenclature it is to be hoped that when the list is finally published the later or more acceptable names of some of the birds will be employed as well as the old, if it is found necessary to use the latter at all. One of the aims of the Aust. O.U. is to bring the *Game Acts* of the various States into line, and everything done in order now will naturally assist that very desirable object.

South Australian Ornithological Association.

THE annual meeting of this association was held at the residence of Dr. A. M. Morgan on the evening of the 7th March. There was a good attendance, and Mr. A. H. C. Zietz occupied the chair. The secretary, Mr. J. W. Mellor, read the third annual report, which showed that the association had made steady progress, relating to ornithology, and recording notes of interest gathered in different parts of the States. The secretary's oological collection now contained 500 Australasian species. He was the first South Australian to gain this distinction. The financial statement showed that the receipts had a little more than covered working expenses, and had left a cash balance. The report and financial statement were adopted. The following officers were elected:—President, Mr. M. Symonds Clark; vice-president, Mr. E. Ashby; secretary and treasurer, Mr. J. W. Mellor; these officers to form the committee of management. A hearty vote of thanks was accorded to Dr. Morgan for his support in providing a place of meeting, and to Mr. J. W. Mellor for piloting the association from its inception. In continuation of the meeting, Mr. M. Symonds Clark occupied the chair, and a number of exhibits was shown. Mr. E. Ashby displayed seven specimens of the Acanthiza family, commonly called Tits—viz., *Acanthiza apicalis*, *A. pusilla*, *A. nana*, *A. lineata*, *A. inornata*, *A. reguloides*, and *A. chrysorrhoa*. Mr. A. H. C. Zietz, F.L.S., showed the Collared Plain-Wanderer (*Pedionomus torquatus*), and species of *Sericornis* or Scrub-Wrens, viz., *Sericornis osculans* and *S. frontalis*, while Mr. F. R. Zietz exhibited *S. maculata*, from Kangaroo Island. Mr. J. W. Mellor showed a specimen of the Peaceful Dove (*Geopelia tranquilla*), and a clutch of eggs of the rare Laughing Owl of New Zealand (*Sceloglaux albifacies*), of which only a few clutches are in existence. Dr. Morgan tabled specimens in oology from this State. A lengthy discussion ensued upon the various exhibits shown.

About Members.

DR. (Colonel) C. S. Ryan has temporarily left Melbourne to be present at the coronation of the King. He is the first office-bearer of the newly established Aust. O.U. to visit England, and no doubt when abroad, and matters pertaining to Australasian ornithology and the Union crop up, he will not hide the light of either under a bushel.

In the list of original members of the Aust. O.U. published in last issue of *The Emu* the initials of Mr. Webb (North Queensland) were printed "E. W." instead of "E. H."

Consequent upon the death of his father (Mr. Albert A. C. Le Souëf), Mr. Dudley Le Souëf, C.M.Z.S. (the hon. secretary of the Aust. O.U.), has been appointed Director of the Zoological Gardens, Melbourne. While sympathising with our secretary in his bereavement, members of the Union will be gratified that he has been called to fill an important office held by so worthy a father.

It is somewhat over a year since Mr. A. J. Campbell's work on "Nests and Eggs" was distributed in Australia. Those who assisted in its publication by subscribing will be pleased to learn that the market value of their copies has increased to 70s. Except a very limited portion of the edition in the hands of Mr. Edwards, bookseller, Marylebone, England, and a few over-copies in the possession of the author, there are none available. When these are sold the book will be practically out of print.

AN EXPLORING COLLECTOR.—The following is an extract of a letter received from Mr. Tom Carter:—"The bulk of my skins is made when travelling, often at dinner hour. When one must push on to get water, they get out of shape by being packed green and jolted over this rough country in buckboard. All this coast country is bad to work on account of the shortness of water. I took a trip to the North-West Cape last month (March), hoping to get round and work part of the Exmouth Gulf. There have been splendid rains here, and I had hoped for a good time, but 60 miles above here there had been no rain at all, and consequently no food for the horses, and no road, but dense low scrub and heavy sand, honeycombed with rat holes. There were stony boulder creeks to cross, and soakages of water in rocks were all filled and fouled by kangaroos, &c., and what water there was was salty and bad. One had to clean out the native wells, then fill bucket with pannikin and carry to horses out of a hole which is often 10 feet deep, in the nature of a cave. It is marvellous how the horses do drink brackish water and eat dry feed. The country north of here is very rough, the ranges being 10 to 15 miles

wide and 75 long. It is hard work going over them. I explored one deep gorge with precipitous cliffs and found a great cave a long way up, with water dripping into two pools on the floor. It was evidently a harbour for wild dogs, for their tracks were plainly seen about the cave. Next day I shot an Emu at a pool in the gorge, 2 miles lower down, and laboriously carried half of it, and after much exertion and narrow escapes of having bad falls, I got it inside and poisoned. I had with me my gun and rifle, and my dog was knocked up, its feet being completely skinned. There were lots of Painted Finches (*Emblema picta*) in the gorge watering, but I failed to find any nests. I saw 30 perched on one giant boulder—it was a beautiful sight. I shot a pair of strange birds (Shrike-Robins?) in the mangroves, which I cannot make out; they may be new."

Obituary Notice.

SNOWBALL.—On the 22nd April, at "Nahoo," Narracan, Gippsland, William Snowball, M.B., aged 47 years.

THE general regret felt in widely spread medical circles at the death of Dr. William Snowball is nowhere more keenly felt than in the more inner circle of his ornithological friends and acquaintances.

Dr. Snowball was a keen naturalist, and lover of natural history books, and knew their value well. Although he had not much spare time to devote to ornithology, he had amassed an oological collection of considerable value, many of the specimens being unique. Naturally, the Doctor took much interest in the Aust. O.U., and was present at the initiatory ornithological dinners—the historical "beginnings," so to speak, of the Union. We shall miss his influence and kind advice much.

The Coloured Figure Fund.

THE Council of the Aust. O.U. hope shortly to increase the usefulness of *The Emu* by the insertion of a coloured plate of one or the other of hitherto unfigured birds. The following subscriptions have been received towards the fund:—Dr. C. Ryan (Melbourne), £1; Mr. R. B. Ritchie (Penshurst), 6s.; Col. Legge (Hobart), 6s.; T. Cullen (Wahgunyah), 5s.; Rev. W. Fielder, 1s. 8d.; Mr. A. Mattingley (H.M. Customs), a promise not exceeding £1, when required.

Notes, &c.

MR. Robert Hall's article, "Notes on a Collection of Bird-Skins from Fitzroy River, North-West Australia," will be continued in the next (October) number.

SINCE the proclamation that Egrets are to be protected under the *Game Act* in Victoria all the year round, the following advertisement appeared in a local paper :—"A Sensational Offer—This Week Feathers Half-Price—This (referring to an illustration) Choice White Osprey, 2s.," &c.

PROSECUTIONS UNDER THE VICTORIAN *Game Act*.—On the 24/3/02, at Warrnambool, Ed. Smith, sen., was fined £1 and 5s. for shooting Quail in close season. On 21/5/02, at Pyramid Hill, A. Brien was fined 5s. each for having two Magpies in his possession. Magpies are so well able to take care of themselves and have so increased of late years with protection that many persons are of opinion that a partial protection is quite sufficient, instead of for the "whole year" as at present.

THE Cockatoo and Parrot Exhibition, which is under the auspices of the Council of the Aust. O.U., to be held at the Town Hall, South Melbourne, on the 17th, 18th, and 19th July, in connection with the South Suburban Canary Show, promises to eclipse all previous shows of the kind. The net proceeds of the show are to be given to the Children's Hospital, Melbourne.

A CORRECTION.—Referring to *The Emu*, vol. i., p. 120, and a footnote "The Collecting of Ants' Cocoons as Food for Insectivorous Birds," near the end of the note it is stated that the cocoons "are well dried and will then keep a week or more." It should read "the cocoons will keep a week or more, but when dried will keep indefinitely."

REFERRING to the "Stray Feathers" note on page 28, "Red-capped Robin in Northern Queensland," Mr. F. C. Berney sends the following supplementary information :—"Concerning the same bird I may say that they are very plentiful here just now (19/5/02), and have been since early in March, but previous to that time I had not seen them at all in these parts, but I shot a male in June two years ago at Homestead, on the Campaspe River, where they were very scarce. The female plumage seems here (Richmond, N.Q.) to be greatly in the majority, but perhaps some of them may be immature birds."

The Emu

Official Organ of the Australasian Ornithologists' Union.

"Birds of a feather."

VOL. II.]

1ST OCTOBER, 1902.

[PART 2.

Notes on a Collection of Bird-Skins from the Fitzroy River, North-Western Australia.

BY ROBERT HALL.

With Field Notes by the Collector, J. P. ROGERS.

PART II.

49. ZOSTEROPS LUTEA (Gould), Yellow Silver-eye.

Zosterops lutea, Gould, Birds Aust., fol., vol. iv., pl. 83 (1848);
Gadow, Cat. Birds Brit. Mus., vol. ix., p. 183 (1884).

Adult male, 18/3/01; adult female, 25/3/01; young male, 25/3/01.

The eggs and nest, found for the first time on 17th March, 1901, have been described in the *Victorian Naturalist*.*

50. HALCYON PYRRHOPYGIUS (Gould), Red-backed Kingfisher.

Halcyon pyrrhopygia, Gould, Birds Aust., fol., vol. ii., pl. 22 (1848).
Halcyon pyrrhopygius, Sharpe, Cat. Birds Brit. Mus., vol. xvii.,
p. 258 (1892).

a. Immature male, 19/1/00.

b. Fledgling female, 4/11/01.

Fledgling.—It has just left the nest, and although bearing a strong likeness to the adult, it differs in many respects. The head is striped with brown and flushed with pale cinnamon; tail greenish rather than blue; wings pale blue; lesser coverts edged with rufous; primaries terminally marked with much more black than in specimen *a*; wash of rufous on collar; band of brownish crescentic markings across chest.

[Irides brown; bill brown, tip white, half lower mandible dirty white; legs and feet grey.]

[I found the beginning of a nest (1/11/00) with the tunnel in an ant-heap 4 inches. On the 4th the tunnel extended 12 inches inward. On the 7th I dug it out, and found four eggs. The bird stayed in the whole time, and scarcely moved a muscle when taken from the eggs. I put her quietly down. This was owing to the great heat (120° F. in the shade). The chamber was 6 x 6 x 7 inches.]

* Vol. xviii., p. 32 (June, 1901).

51. HALCYON SANCTUS (Vigors and Horsfield), Sacred Kingfisher.

Halcyon sanctus, Gould, Birds Aust., fol., vol. ii., pl. 21 (1848); Sharpe, Cat. Birds Brit. Mus., vol. xvii., pp. 267, 500 (1892).

- a. Young male, 21/3/01.
- b. Young female, 21/3/01.
- c. Adult male, 26/3/00.
- d. Adult female, 31/12/99.

There is nothing apart from the ordinary form in *c*, but in *a* the head and back are a dull oily olive-green. The head and back of *b* are a brownish-green. In *d* there is no dull green upon the upper surface, and the only resemblance to it is upon the inner secondaries; the upper surface, less crown, is rich blue, though not as intense as the deep ultramarine of *H. macleayi*. The collar is pale buff. Recently I handled a specimen that had its head and back uniform lustreless brown. Thus there is a wide range in the upper surface of species, between a dull brown and a vivid blue or bluish-green. The browner the plumage the whiter the abdominal region and under tail coverts.

[On 7/12/00 I observed one of this species starting its nest in a limb of a "box" tree. The bird was drilling a hole into the white ants' nest in the hollow. Ten days later the chamber was complete, but there were no eggs.]

52. DACELO CERVINA, Gould (sub-sp. of *D. leachii*, Vigors and Horsfield), Fawn-breasted Kingfisher.

Dacelo ceruina, Gould, Birds Aust., fol., vol. ii., pl. 28 (1848); sub-sp., Sharpe, Cat. Birds Brit. Mus., vol. xvii., p. 207 (1892).

One adult female, 7/4/00. Excepting the throat the whole of the under surface is distinctly fulvous, with vermiform cross markings.

[During the heat of the day (7/4/00) this bird usually sits on a well-shaded branch, and sits so close that unless approached almost to the branch it will not move. It generally perches well hidden in leafy boughs.]

53. ÆGOTHELES RUFA (Hall), Rufous Owlet Nightjar.

Ægotheles rufa, Hall, *Vict. Nat.*, vol. xviii., No. 4, p. 60 (1901); *id.*, No. 6.

Adult male and female skins.

54. EUROSTOPUS ARGUS (Hartert), Spotted Nightjar.

Eurostopodus guttatus, Gould, Birds Aust., fol., vol. ii., pl. 8 (1848).
Eurostopus argus, Hartert, Cat. Birds Brit. Mus., vol. xvi., p. 608 (1892).

Two adult females, 6/2/01 and 2/8/01. The spots on the primaries of the February bird are snow white, while those on the other specimen are creamy white.

55. *PODARGUS PHALÆNOIDES* (Gould), Freckled Frogmouth.

Podargus phalænoides, Gould, Birds Aust., fol., vol. ii., pl. 9 (1848);
Hartert, Cat. Birds Brit. Mus., vol. xvi., p. 634 (1892).

Adult male, 13/1/00.

56. *MEROPS ORNATUS* (Latham), Bee-eater.

Merops ornatus, Gould, Birds Aust., fol., vol. ii., pl. 16 (1848);
Sharpe, Cat. Birds Brit. Mus., vol. xvii., p. 74 (1892).

Adult male, 8/2/00.

In the East this bird is strongly migratory, as far as may refer to north and south in Australia. I saw at Perth and Geraldton nesting birds in the November previous (1899). Would they have gone north over the great summertime desert during the first week in February? In February of the same year (1900) I saw in Victoria large flocks. These latter went north soon after.

[There have been a few Bee-eaters here throughout the year, but they have increased greatly during the past month or two (April and May). At the present time (21/7/00) they are in small flocks, and very plentiful. They have been noted to roost in bunches like Wood-Swallows—remarkable. During March, 1900 (19th), I watched one with a grasshopper in its bill. It was beating it upon a limb, first to one side then to the other, and swaying its own body in the process—beat and sway, from side to side, for some minutes.]

57. *CRATICUS PICATUS*, Gould (sub-species *C. nigrogularis*), Pied Butcher-Bird.

Cracticus picatus, Gould, Birds Aust., fol., vol. ii., pl. 50 (1848);
Gadow, Cat. Birds Brit. Mus., vol. viii., p. 96 (1883).

Adult male, 26/5/01.

58. *LALAGE TRICOLOR* (Swainson), White-shouldered Caterpillar-eater.

Campephaga humeralis, Gould, Birds Aust., fol., vol. ii., pl. 63 (1848).
Lalage tricolor, Sharpe, Cat. Birds Brit. Mus., vol. iv., p. 92 (1879).

a. Adult female, 20/11/01.

b. Nestling, 15/5/01.

c. Immature male, not dated.

d. Immature male, 21/5/00.

e. Immature male, 18/11/01.

f. Adult male, 10/11/01.

Specimens *c* to *f* show an interesting series of change of plumage from youth to maturity. Specimen *b* is still in its nestling garb.

Nestling.—The under surface boldly shows longitudinal streaks and faint bars upon the flanks. The upper surface, less the rump, shows conspicuous broad marks of blackish-brown and white, the blackish-brown marks being subterminal and the white marks

terminal. [Irides brown; upper mandible brown, cutting edge yellowish; tip of lower mandible brown, balance yellowish; legs and feet brown.]

In *c*, *d*, and *e* the change from brown to black of the upper surface is by complete moult. The change of brown to white of the under surface is composed of several moults, or a gradual process of pigment alteration—I should say the latter. The secondaries and coverts of *c* and *d* show some rufous, the coverts only of *e*. Specimen *f* is free of it. The tips of the primaries are white in *c* and *d*, and black in *e* and *f*, as are the whole quills. The lower mandible of *c* is brownish-white upon its proximal end, while in *d* the whole bill is black.]

[Many of these have their foreheads stained yellow and matted with the pollen of two species of flowering shrubs (4/7/01). The flowers of each contain many small insects. During one evening (18/5/01) I watched this Caterpillar-eater waiting on the ground for small flying insects. As one was about to pass close by it rose and snapped it and settled again at once. It then hopped a short distance and again waited. On 4th January I climbed to 20 feet up a tree and observed two young in a nest.]

Mr. Rogers sent fledglings of many species hatched out in early May, including one of this species. Last year he complained in February that owing to the need of a rainfall the birds had ceased for a season to nest. Later on in the year (September) his letter is:—"It is very unusual to see young Honey-eaters at this time of the year, as it is usual for them to build with the heavy tropical rain (February-March). Owing to a September storm this year (1900) many birds started laying." Thus the range of nesting is very great and variable.

59. *EPHATHIANURA TRICOLOR* (Gould), Tricoloured Chat.

Ephthianura tricolor, Gould, Birds Aust., fol., vol. iii., pl. 66 (1848); Sharpe, Cat. Birds Brit. Mus., vol. vii., p. 667 (1883).

Adult male, 10/2/00.

[On 10th February, 1900, I saw my first pair, the following day a half-dozen pairs. Possibly they are arriving at an end of their migration. They were feeding with Chestnut-eared Finches, but on black beetles, and not on seeds, as were the Finches.]

60. *DICAËUM HIRUNDINACEUM* (Shaw), Flower-pecker or Mistletoe-Bird.

Dicaeum hirundinaceum, Gould, Birds Aust., fol., vol. ii., pl. 34 (1848); Sharpe, Cat. Birds Brit. Mus., vol. x., p. 19 (1885).

One specimen, young, 8/2/00. No white tips to tail quills. [Upper mandible and tip of lower brown; base of lower mandible reddish-yellow.]

[Quite common, several singing daily near my camp. They start "singing" as soon as the air gets hot, and continue doing so through the heat of the day (January, 1900).]

61. CLIMACTERIS MELANURA (Gould), Black-tailed Tree-Creeper.

Climacteris melanura, Gould, Birds Aust., fol., vol. iv., pl. 97 (1848);
Gadow, Cat. Birds Brit. Mus., vol. viii., p. 334 (1883).

a, b. Adult males, 16/7/00, 6/2/02.

c, d. Young, unsexed, 6/2/02, 8/3/02.

Specimen *c* is almost entirely lustreless black, fawn-coloured band on wing; fawn coloured under wing coverts; a faint trace of creamy-white on the chin only; throat and chest black; under tail coverts tipped with a spot of white. [Irides pale greyish-brown; bill, tip, cutting edge, and half lower mandible grey; upper mandible and basal half of lower brown; corner of mouth whitish; feet leaden-grey.]

Specimen *d* has chin and throat dull brownish-cream with lighter spots, bearing no resemblance to these regions in the adult male; chest shows a tendency to pale brown; head and whole upper surface black as in *c*.

62. SITTELLA LEUCOPTERA (Gould), White-winged Tree-Runner.

Sittella leucoptera, Gould, Birds Aust., fol., vol. iv., pl. 103 (1848);
Gadow, Cat. Birds Brit. Mus., vol. viii., p. 363 (1883).

Adult male, 26/3/00; adult female, 23/2/00.

63. GRALLINA PICATA (Latham), Magpie Lark.

Grallina australis, Gould, Birds Aust., fol., vol. ii., pl. 54 (1848).

Grallina picata, Sharpe, Cat. Birds Brit. Mus., vol. iii., p. 272 (1877).

Young female, 20/3/01.

[Near every place of water the Magpie Larks are now building their nests (20/11/1899).]

64. PARDALOTUS RUBRICATUS (Gould), Red-lored Pardalote.

Pardalotus rubricatus, Gould, Birds Aust., fol., vol. ii., pl. 36 (1848);
Sharpe, Cat. Birds Brit. Mus., vol. x., p. 60 (1885).

a, b, and c. Adult males, April, 1900.

d. Young male, 7/2/00.

e to h. Adult females, April, 1900.

j. Adult female, 14/6/00.

The young quickly assume the plumage of the adult, without respect to age. The yellow of the upper and under tail coverts and of the chest varies in intensity and area. They vary among themselves, as the strongly marked upper tail coverts and the feebly marked under tail coverts of one specimen may be reversed in a second specimen of apparently the same age.

In two specimens the under tail coverts are white. With age the culmen darkens from a yellowish-brown to a deep brown. The reds in one specimen above are intense.

[Specimen *d*.—Irides pale yellow with a greenish tinge. Its note is very soft, and repeated twice when calling. The answering notes are pitched in a lower key. I noted one bird

having a struggle in the breaking of a large white grub (22/8/01). It went from bough to bough, and stayed very little time on any one branch. On 23rd July, 1901, I found a nest in a bank overhanging a waterhole. The bank was set like cement for the first 2 inches, after that sand. It is wonderful that such little birds can do this lathe-like drilling. It went in for 18 inches. Dimension of chamber, 4 x 4 x 5.5 inches; nest lined with paper bark.]

65. *PARDALOTUS UROPYGIALIS* (Gould), Chestnut-rumped Pardalote.

Pardalotus uropygialis, Gould, Birds Aust., fol., vol. ii., pl. 41 (1848); Sharpe, Cat. Birds Brit. Mus., vol. x., p. 62 (1885).

a. Adult male, 16/1/00.

b. Young female, 27/8/00.

In *a* the crown is showing the last of the moult from grey to black, being now almost dense black. The rump colouring agrees with the text of Gould, but not the figure, which is much more highly and brightly coloured. The bill of this specimen is also much larger than those referred to by Gould.

Description of Young Female.—In general appearance it is like the adult. Feathers of forehead grey, broadly centred with deep brown; feathers of crown deep brown edged with grey; lores light orange; brows creamy-white and extending well back; primaries light brown and edged with the white of the adult; speculum not so crimson as in adult. [Bill creamy-white, culmen brown; legs and feet leaden grey.]

[Of this and the preceding species I have found several nests, and I have invariably found the present one to tunnel in loose earth instead of hard ground. On 25/6/01 I secured a nest built in loose sandy soil. It was roofed and built of flat paper bark. In it were two eggs. Another nest containing two eggs was found in the inside of an old well (10th November) that had fallen in. The drill was six inches, and the nest made principally of ribbon-grass roots, a silky-like substance.]

66. *PETROCHELIDON ARIEL* (Gould), Fairy Martin.

Callocalia ariel, Gould, Birds Aust., fol., vol. ii., pl. 15 (1848).

Lagenoptastes ariel, Gould, Handbook Birds Aust., i., p. 113 (1865).

Petrochelidon ariel, Sharpe, Cat. Birds Brit. Mus., vol. x., p. 199 (1885).

Adult female, 15/7/00.

[Irides reddish-brown; legs and feet black.]

[On 20/2/01 I saw 100 to 200 in a flock on a small plain.]

67. *BATHILDA RUFICAUDA* (Gould), Red-faced Finch.

Estrilda ruficauda, Gould, Birds Aust., fol., vol. iii., pl. 84 (1848).

Bathilda ruficauda, Sharpe, Cat. Birds Brit. Mus., vol. xiii., p. 374 (1890).

Adult male, 13/10/01.

Young male, 13/10/01.

In this young bird the first sign of red upon the head appears above the eye; tail and bill reddish.

This adult male agrees in certain respects with Mr. Hartert's *Bathilda ruficauda clarescens*, sub-sp.* The red is extending over the crown, and is strong upon the lateral portions of it and around the eye. There is no red upon the lower portion of the throat. The abdomen is yellow, but scarcely bright yellow; wing, 53 mm.

A specimen in the National Museum, Melbourne, shows the red extending across the anterior half of the head.

68. *EMBLEMA PICTA* (Gould), Painted Finch.

Emblema picta, Gould, Birds Aust., fol., vol. iii., pl. 97 (1848); Sharpe, Cat. Birds Brit. Mus., vol. xiii., p. 295 (1890).

One adult male, 24/3/00.

Two adult females, 24/3/00 and 6/4/00.

The amount of red upon the breast of the March female is almost as great in quantity as on that of the male. The April female is much paler upon the back than the other.

[On 29/4/00 I found a nest of this species in a bunch of spinifex. It contained one egg. Four days later the nest was torn away and the egg gone, which was probably the work of a Hawk or lizard. So tame is this species that two came to the camp and had a drink from the bucket. On 5th November I met it for the first time here (Livuringa). My experience so far is that it keeps near the hills.]

69. *POEPHILA ACUTICAUDA* (Gould), Long-tailed Finch.

Poephila acuticauda, Gould, Birds Aust., fol., vol. iii., pl. 90 (1848); Sharpe, Cat. Birds Brit. Mus., vol. xiii., p. 375 (1890).

Adult male, 1/2/00.

[While travelling through spinifex (14/4/00) I found a nest in a bush, 5 feet from the ground. It contained three fresh eggs. On 24th March I saw several nests being built.]

70. *TÆNIOPYGIA CASTANOTIS* (Gould), Chestnut-eared Finch.

Amadina castanotis, Gould, Birds Aust., fol., vol. iii., pl. 87 (1848).

Tæniopygia castanotis, Sharpe, Cat. Birds Brit. Mus., vol. xiii., p. 311 (1890).

One nestling, 24/7/00. Bill jet black (see Horn Rep., Zool. p. 88); no sign of chestnut upon cheeks or ear coverts; the only signs of bar markings are upon the sides of the chest, and very faint. [Irides brown; bill black, corner of mouth whitish; legs and feet pale fleshy-grey.]

[On 4/4/00 I found a nest that had been occupied a second time, as four eggs, decomposed internally, were hidden beneath the lining. They corresponded with the fresh eggs above them. When bathing it squats in the water and splashes about for 3 to

* Nov. Zool., vol. vi., p. 427 (1899).

4 minutes, while the Honey-eater, *P. heartlandi*, is in and out many times.]

71. *POEPHILA MIRABILIS* (Hombron and Jacquinot), Scarlet-headed Grass-Finch.

Poephila gouldiae, Gould, Birds Aust., fol., vol. iii., pl. 88 (1848).

Poephila armitiana, Ramsay, P.L.S. N.S.W., vol. ii., p. 70; *id.*, March, 1889 (A. J. North).

Poephila mirabilis, Gould, Birds Aust., fol., vol. iii., pl. 89 (1848); Sharpe, Cat. Birds Brit. Mus., vol. xiii., p. 378 (1890).

a. Adult male, 6/4/00.

b, c, d. Adult males (black-headed variety, *i.e.*, *P. gouldiae*), 6/4/00.

In the South Australian Museum may be seen many forms intermediate (showing red and black) between *P. mirabilis* and one of the varieties, *P. gouldiae*.

[The scarlet-headed bird is not common, while I have not seen one of the yellow-headed variety. *P. gouldiae* comes with *P. acuticauda* in a small flock for the purpose of drinking from a rock hole. I find them near the coast rather than inland. On 31/8/00 I met a large flock of *P. mirabilis* and *P. gouldiae* on a sand ridge fifteen miles inland from Derby.

I believe these birds are now (24/3/00) nesting, as I saw a pair building up an old nest which was placed in a bunch of spinifex. I have always seen the birds in rough stony country. In no place are they plentiful, as about 15–20 is the most I have seen congregated. This was in December. The stomachs of those dissected were full of spinifex seed. I saw, at Breakaway, on 15/1/01, a large flock of finches. They consisted of *P. gouldiae*, *P. mirabilis*, and *T. castanotis*. The green backs of the former are very beautiful as they appear with the rising of the birds against the dry grass.]

72. *NEOCHMIA PHAETON* (Hombron and Jacquinot), Crimson Finch.

Estrela phaeton, Gould, Birds Aust., fol., vol. iii., pl. 83 (1848).

Neochmia phaeton, Sharpe, Cat. Birds Brit. Mus., vol. xiii., p. 389 (1890).

One adult male, 27/9/00.

[Two pairs have built near the camp of my neighbour, Mr. Douglas. One of these is under an old rug hanging in a tree. As soon as the birds showed their intentions (15/3/00) the rug was well secured for their purpose, and they completed their dwelling in due course. The second is placed in a small mistletoe growing immediately above his tent. Both are built of paper bark, grass, and "ravelings" of an old net. When Mr. Douglas detected the wish of the birds regarding the net he unwound much of it, and they carried it away in pieces as fast as he undid the tangle. In one case the male bird did all the work, while the female sat upon a limb and watched him.

With the other pair the female remained inside the skeleton nest and built in the material as her mate brought it. At times he went inside to help her. All are in beautiful plumage.

On 27th September I found a nest with eggs in a low pandanus palm near the river's (Fitzroy) edge. It was made of pandanus fine rootlets and paper bark, and lined with soft paper bark (of a species of tea-tree).

I find the young just now (22/8/00) to be very common, but there are no nests as far as I can trace.]

73. *MUNIA CASTANEITHORAX* (Gould), Chestnut-breasted Finch.

Donacola castaneothorax, Gould, Birds Aust., fol., vol. iii., pl. 94 (1848).

Munia castaneithorax, Sharpe, Cat. Birds Brit. Mus., vol. xiii., p. 340 (1890).

One adult male, 10/10/01.

74. *MUNIA PECTORALIS* (Gould), White-breasted Finch.

Donacola pectoralis, Gould, Birds Aust., fol., vol. iii., pl. 95 (1848).

Munia pectoralis, Sharpe, Cat. Birds Brit. Mus., vol. xiii., p. 354 (1890).

Two adult males, 28/3/00.

One specimen has eleven obsolete bars upon each of the two inner secondaries of each wing. They are but slightly browner than the interspaces, which cover about the same area as the bars. They may serve as ancestral marks.

[On 2/4/00 I found a nest being built. On the 4th inst. it had a very unfinished appearance, but contained one egg. On the 15th inst. it contained six eggs. The birds were still adding to the nest, as I saw one carry a stem of grass while I watched. There was no lining, and it was placed in a spinifex bush. The roof was the thickest part of the nest, which measured externally 7 x 7 x 7 inches; internally, 5 x 5 x 4 inches.]

75. *STICTOPTERA ANNULOSA* (Gould), Black-ringed Finch.

Estrela annulosa, Gould, Birds Aust., fol., vol. iii., pl. 81 (1848).

Stictoptera annulosa, Sharpe, Cat. Birds Brit. Mus., vol. xiii., p. 314 (1890).

Adult female, 16/2/00.

Fledgling, not sexed, 4/7/01.

Fledgling.—Although it is just about to leave the nest for the first time, it has in every respect a likeness to the parents, which are strongly contrasted and prettily marked in white, black, and brown. It helps to show how early the young of birds which sit upon their eggs in a covered nest mature. Dorsally there is no difference except in so far that the young has a brown instead of a black forehead. The whole under surface is cream coloured, with traces of the two adult bands. The cream above the pectoral band, as well as that above the throat band, will need to differentiate and become white, as in adults. The sides

of the face are bounded by a dim black line. Here also the cream will need to become white. The secondaries are well spotted, but the primaries are almost uniform brown; one is quite so. [Irides brown; bill brown, corner of mouth blue; legs and feet leaden grey.]

[An unfinished nest was found by Mr. Douglas on 11/2/00.]

76. *ARTAMUS CINEREUS* (Vieillot), Grey-breasted Wood-Swallow.

Artamus cinereus, Gould, Birds Aust., fol., vol. ii., pl. 29 (1848); Sharpe, Cat. Birds Brit. Mus., vol. xiii., p. 16 (1890).

Fourteen skins have been received from Livuringa, as follows:—

- a.* Young male, 21/11/01.
- b.* Young male, 8/2/00.
- c.* Young, unsexed, 24/10/01.
- d.* Immature, unsexed, 5/4/00.
- e.* Female, 21/11/01.
- f, g.* Males, 19/11/01, 21/11/01.
- h, j.* Adult males, 5/1/00, 15/12/00.
- k, l.* Adult males, 19/11/01, 25/11/01.
- m.* Adult female, 4/11/01.
- n, o.* Adult females, 15/12/00, 5/4/00.

In two males and two females (*e, f, g, n*) there is a trace of a frontal line above the base of the culmen; in other specimens there is no trace of it except before the lores. In two adult males (*h, j*) the under tail coverts are broadly edged with white, while in the adult specimen *k* they are narrowly edged with white. I am disposed to sink *A. melanops* and *A. venustus* in favour of this species, and give it a wider distribution.

a, b, and *c* are but a week or two (perhaps more with *b* and *c*) from the nest; *d*, a few months.

e, f, and *g* are similar to adults. They probably have been bathing in muddy water, because of the deposited earth upon the head and neck and irregularly along the whole under surface. In the broad white tips to the tails I notice they may be flushed with a pale flush of chocolate or they may be pure white, independent of age or sex, as in *a* and *b* (young), *m* and *n* (adults).

The length of wing in the adults varies between 4.55 and 4.9 inches. Specimens *j* and *n*, 4.55 inches; *g* and *o*, 4.6 inches; *e, k, m*, 4.7 inches; *l*, 4.75 inches; *f*, 4.8 inches; *h*, 4.9 inches.

Specimens *a* and *b* offer two types of plumage in the young. Specimen *a* has its whole under surface, including chin but excluding under tail coverts, light creamy-yellow or pale rufous. This pale colour passes continuously to the sides of the head and neck. The only indication of black face is just behind the commissure, within the angle of lower mandible and in the proximal portion of the lore. The most of the bill, lores, head, neck, and back appear to be of this tawny

colour, blotched or streaked with brown, or brown marked with tawny in about equal quantity. Between the lower portion of the black rump and the back there is a clear line dividing the black from the brownish-yellow portion. The inner secondaries are mostly brownish-yellow, as are the tips of all the coverts. The tips of the secondaries are brownish, of the primaries whitish. The tail is black with whitish tips. The rump is very finely edged with pale brown. Centre under tail coverts broadly edged with white.

[Bill flesh colour, tip blackish-brown.]

Specimen *b* presents quite a different appearance to *a*. It is possibly weeks older, but it retains still a portion of the plumage of the nestling. There is none of the pale rufous of *a*, the whole of the upper surface to the rump being greyish-brown streaked with dull white; lores black; chin blackish; under surface to under tail coverts greyish-fawn; wing coverts edged with dull white.

[Bill light brown, tip blackish-brown.]

[There appears to be a wide range in the nesting, for I found eggs on 7th February, 1900, and 31st August of the same year. On 16th January, 1901, I saw a nest being built. On 1st February I saw several broods of young; some nests unlined: external measurements, 5 x 4.5 x 3 inches; internal, 2.5 x 2.5 x 1.5 inches. They are feeding largely upon something within the blossoms of bauhinia trees. The flowers are infested with insects. On 22/9/01 I observed a cluster within a rent in a tree. They were roosting, and sheltering leeward in a high wind. This is the first time I have seen this species in a bunch.]

77. ARTAMUS PERSONATUS (Gould), Masked Wood-Swallow.

Artamus personatus, Gould, Birds Aust., fol., vol. ii., pl. 31 (1848); Sharpe, Cat. Birds Brit. Mus., vol. xiii., p. 16 (1890).

Adult male and female, 16/5/00, 22/5/00.

[On 24/5/00 this species arrived in thousands, and as with *A. superciliosus*, noted, it seems as if they had arrived at or near end of migratory course. There were a few before this date. The next month in the following year (26/6/01) they also appeared in thousands (Lower Livuringa).]

78. ARTAMUS MINOR (Vieillot), Little Wood-Swallow.

Artamus minor, Gould, Birds Aust., fol., vol. ii., pl. 28 (1848); Sharpe, Cat. Birds Brit. Mus., vol. xiii., p. 20 (1890).

Adult male and fledgling, 11/1/00, 31/1/00.

79. ARTAMUS SUPERCILIOSUS (Gould), White-browed Wood-Swallow.

Artamus superciliosus, Gould, Birds Aust., fol., vol. ii., p. 32 (1848); Sharpe, Cat. Birds Brit. Mus., vol. xiii., p. 15 (1890).

a and *b*. Adult male and female, 23/5/00. Derby.

c. Young, sex not marked. Breakaway, 25/12/00.

That *c* is a young bird is evident by the scattered greyish-white markings upon the otherwise uniform slate-grey back. The under surface is remarkable, and were it not that the inner portions of the flanks of an adult female show a pale vinous-purple, the position of the bird would have been doubtful. The whole of the under surface from the chest downward is of this colour, being darker sooty-grey upon and above the upper breast and paler upon the under tail coverts than this pale vinous-purple. The tips of the wing quills are white, the interscapulum is brown and spotted. In other respects it agrees mostly with an adult female, and is most likely a female. [Irides light brownish-grey; bill deep blue at base, black at tip; corner of mouth creamy-white; legs and feet blue-grey.]

[In the two specimens the irides differ from Gould's description (black); male is nearer orange, female lighter yellow. Within the last few days (24/5/00) this species appears to have arrived, possibly from their migratory course. They are now feeding upon the honey-laden flowers, and this perhaps accounts for their brush tongues. They are eating in the company of *A. personatus* and *Manorhina lutea*.]

80. ARTAMUS LEUCOGASTER* (Valenciennes), White-rumped Wood-Swallow.

Artamus leucopygialis, Gould, Birds Aust., fol., vol. ii., pl. 33 (1848).

Artamus leucogaster, Sharpe, Cat. Birds Brit. Mus., vol. xiii., p. 3 (1890).

One adult male, 15/12/00.

The plumage is browner than in the southern birds (Victoria) I have examined. The latter have always been slate-brown. Culmen between 17 and 18 mm.

[Among the habits of this species is one that makes a picture. After a preening of feathers, and while perched upon boughs, the birds spread their wings as if soaring. They keep facing the wind in this way for 50 seconds on an average.]

81. LOPHOPHAPS FERRUGINEA (Gould), Red Plumed-Pigeon.

Lophophaps plumifera, Salvadori, Cat. Birds Brit. Mus., vol. xxi., p. 533 (1893).

Lophophaps ferruginea, Gould, Birds Aust., fol., suppl., pl. 68 (1869); North, Trans. Roy. Soc. S.A., vol. xxii., part ii., pp. 155-157 (1898).

Adult female, 8/1/00.

The whole of the under surface from gorget to vent is uniform cinnamon colour. There are no cinnamon rays upon the under wing coverts (as in young), which are being moulted. [Bare part before the eye brick red, at rear of it orange.]

* *Artamus leucorhynchus*, Linn., appears to be the earliest name employed. See footnote, p. 3, vol. xiii., Cat. Birds Brit. Mus. (1890).

A. leucorhynchus parvirostris, sub-sp., is the nomenclature for the Australian form, according to Mr. Hartert, Novit. Zool., vol. vi., Dec., 1899.

[On 31st December a flock came to my camp and fed about the fireplace. These birds fly differently to most pigeons, giving a few very quick, strong strokes with their wings, and then they seem to be able to sail 150 yards without the slightest motion of their wings. On 23rd July I found a nest with one egg in it. Revisited it on 26th, and observed two eggs. The nest was simply a hollow between two spinifex bushes, and between two stones within them. There were a few spinifex leaves (parts of twigs) to keep the eggs off the stones. While travelling (4/5/00) through spinifex on the top of a hill one of this species flew from a bunch of spinifex, and struggled as if wounded, thus adopting the lure of many other birds. Upon examination of the place I found two eggs, one of which was broken. This resulted by the mother bird leaving the nest hastily. I followed the bird, and allowed it to lead me 200 yards away, when she flew away. The eggs contained chicks.]

82. OCYPHAPS LOPHOTES (Temminck), Crested Pigeon.

Ocyphaps lophotes, Gould, Birds Aust., fol., vol. v., pl. 70 (1848);
Salvadori, Cat. Birds Brit. Mus., vol. xxi., p. 535 (1893).

Nestling, 5/10/01. Chin and centre of upper portion of throat bare of feathers or down.

[Irides pale grey; bill, tip white, balance leaden; legs and feet pale pink.]

[On 8/10/00 I found two eggs.]

83. GEOPELIA TRANQUILLA (Gould), Peaceful Dove.

Geopelia tranquilla, Gould, Birds Aust., fol., vol. v., pl. 73 (1845);
Salvadori, Cat. Birds Brit. Mus., vol. xxi., p. 456 (1893).

One adult male, 1/7/01.

[Nest found 3/1/99, containing two fresh eggs.]

84. CALYPTORHYNCHUS MACRORHYNCHUS (Gould), Great-billed Cockatoo.

Calyptorhynchus macrorhynchus, Gould, Birds Aust., fol., vol. v., pl. 8 (1848); Salvadori, Cat. Birds Brit. Mus., vol. xx., p. 110 (1891).

Young female, 4/10/01.

[To-day (8/5/00) I watched certain individual birds feeding upon the seed-pods of a species of acacia. One cracks the fruits on a branch, eats the seed, and nipping off the branch allows it to fall to the ground. Mr. Gould says this is pure mischief, but I am inclined to think it is to prevent going over the same area a second time. Nearly every twig with a bitten pod is clipped off. However, this does not always apply to the trees upon which they feed, because some are dropped to the ground which bear neither fruit nor grub. That seems like mischief. When feeding upon the chestnut-tree branches as thick as a man's little finger are bitten through without any apparent effort. A branch when severed is held in the bill,

then passed to the foot, when the berries are picked. If the branch with the berries upon it is close to the bird's present perch the fruits are picked without a severance of the branch. To bite off the branch seems to me to save over much reaching.

On a moonlight night this species flies about uttering its usual cry, but so far I have not heard it on a dark night.]

I have noticed *Barnardius semitorquatus* draw from blossoms the sweets and then nip the twig and drop it when used.

85. CACATUA GYMNOPIS (Slater), Bare-eyed Cockatoo.

Cacatua gymnopsis, Sharpe, in Gould's Birds N. Guin., pt. xix., pl. 1 (1885); Salvadori, Cat. Birds Brit. Mus., vol. xx., p. 127 (1891).

One adult skin, 28/5/01.

[The Cockatoos have been calling all night (9/3/01). The flood waters covered the bases of the trees in which they were roosting, and the rushing of the torrent probably disturbed them. It was moonlight, though cloudy. On 28/9/00 Mr. M'Larty, the Livuringa station manager, discovered a nest with one featherless young. When feeding upon the cajaput blossoms (24/10/01) it cuts off the flowering twigs, I should say to the same issue as the Black Cockatoo]—*i.e.*, when used destroyed, to save time in going "fruitlessly over the same ground."

86. TRICHOGLOSSUS RUBRITORQUES (Vigors and Horsfield), Red-collared Lorikeet.

Trichoglossus rubritorquis, Gould, Birds Aust., fol., vol. v., pl. 49, part ix. (1842).

Trichoglossus rubritorques, Salvadori, Cat. Birds Brit. Mus., vol. xx., p. 60 (1891).

One adult male, 12/10/01.

87. MELOPSITTACUS UNDULATUS (Shaw), Warbling Grass-Parrakeet.

Melopsittacus undulatus, Gould, Birds Aust., fol., vol. v., pl. 44 (1848); Salvadori, Cat. Birds Brit. Mus., vol. xx., p. 594 (1891).

One adult female, 28/2/00.

[This bird is said to come in large flocks just prior to the rain, but I saw immense flocks at Lower Livuringa in July, when no rain had fallen for months before or later.

In one flock I saw a specimen of decided canary-yellow. It was a variety of this species, judging by its form, manner of flight, and association.]

88. PTILOSLERA VERSICOLOR (Vigors), Varied Lorikeet.

Trichoglossus versicolor, Gould, Birds Aust., fol., vol. v., pl. 51 (1848).

Ptilosclera versicolor, Salvadori, Cat. Birds Brit. Mus., vol. xx., p. 66 (1891).

One mature male, 11/1/00; one immature male, 22/10/01.

89. MILVUS AFFINIS (Gould), Kite.

Milvus affinis, Gould, Birds Aust., fol., vol. i., pl. 21 (1848); Sharpe, Cat. Birds Brit. Mus., vol. i., p. 323 (1874).

One adult skin, 20/11/01.

[The Kites have nearly all left Livuringa for a time (12/10/01). To-day (8/2/00) the Kites were back in Livuringa in great numbers. They seem to leave here in October, and return about February-March, and only an odd one is to be seen in the hot season. Mr. M'Larty, the manager of the station, gives this as his opinion, and considers they go to spend the wet season about the centre of the Kimberley goldfields (the high country about Hall's Creek). On 14/3/00 they were in large numbers about Livuringa station.]

90. HIERACIDEA BERIGORA (Vigors and Horsfield), Striped Brown Hawk.

Hieracidea orientalis, Gould, Birds Aust., fol., vol. i., pl. 12 (1848).

Hieracidea berigora, Sharpe, Cat. Birds Brit. Mus., vol. i., p. 421 (1874).

Adult male, 30/6/01.

[The Brown Hawk and Kestrel are here (Upper Livuringa, 3/1/01), in great numbers, feeding upon the over-large population of well-developed grasshoppers.]

91. HIERACIDEA ORIENTALIS (Schlegel), Brown Hawk.

Hieracidea berigora, Gould, Birds Aust., fol., vol. i., pl. xi. (1848).

Hieracidea orientalis, Sharpe, Cat. Birds Brit. Mus., vol. i., p. 422 (1874).

Immature male, 28/8/00; immature skin, 2/7/01.

92. ASTUR APPROXIMANS (Vigors and Horsfield), Goshawk.

Astur approximans, Gould, Birds Aust., fol., vol. i., pl. 17 (1848); Sharpe, Cat. Birds Brit. Mus., vol. i., p. 126 (1874).

Immature skin, 12/1/01.

93. ACCIPITER CIRRHOCEPHALUS (Vieillot), Sparrow-hawk.

Accipiter torquatus, Gould, Birds Aust., fol., vol. i., pl. 19 (1848).

Accipiter cirrhocephalus, Sharpe, Cat. Birds Brit. Mus., fol., vol. i., p. 141 (1874).

Two immature skins, unsexed, 17/11/01, 24/11/01.

94. NINOX BOOBOOK (Latham), Boobook Owl.

Athene boobook, Gould, Birds Aust., fol., vol. i., pl. 32 (1848).

Ninox boobook, Sharpe, Cat. Birds Brit. Mus., vol. i., p. 169 (1875).

Immature skin, 6/1/01. Length of wing, 11.2 inches.

[Three generally in one of the house fig trees, December-January, 1900-01, calling softly in the day time]; two now.

95. STILTIA ISABELLA (Vieillot), Pratincole.

Glareola grillaria, Gould, Birds Aust., fol., vol. vi., pl. 22 (1848).*Stiltia isabella*, Sharpe, Cat. Birds Brit. Mus., vol. xxiv., p. 51 (1896).

One immature male, 1/1/01.

There is merely a faint flush of brown upon the breast. It is more creamy. The breast is free from spots, but the chest is streaked. The first primary is very little longer than the second and is scarcely attenuated.

96. GLAREOLA ORIENTALIS (Leach), Oriental Pratincole.

Glareola orientalis, Gould, Birds Aust., fol., vol. vi., pl. 23 (1848);

Sharpe, Cat. Birds Brit. Mus., vol. xxiv., p. 51 (1848).

One skin, female, 29/1/01.

I take this to be an immature bird. The throat is uniform and pale rufous, and the ring of black is unbroken. Between the rufous and black is a narrow line of white.

[I saw to-day (31/1/01) a large flock upon the ground in the centre of a great plain near Myroondah station. They were quiet, and allowed me to approach within twenty yards of them. They then flew away. On 7/2/00 I saw a flock flying high. They seem to arrive when rain threatens to come.]

97. ERYTHROGONYS CINCTUS (Gould), Red-kneed Dottrel.

Erythrogonyx cinctus, Gould, Birds Aust., fol., vol. vi., pl. 21 (1848);

Sharpe, Cat. Birds Brit. Mus., vol. xxiv., p. 125 (1896).

Adult male, 6/2/00; immature male, 22/11/01.

[I always see this species on the edge of a clay-pan, but never on the bank of the river with the Black-fronted Dottrel. To-day (6/2/00) I saw one crossing a narrow neck of water, six yards wide. It tried to wade, but finding it too deep it swam across with ease. While standing on the bank they often bow or duck their heads with a slow motion.]

98. LOBIVANELLUS MILES (Bodd), Masked Plover.

Lobivanellus personatus, Gould, Birds Aust., fol., vol. vi., pl. 10 (1848).*Lobivanellus miles*, Sharpe, Cat. Birds Brit. Mus., vol. xxiv., p. 140 (1896).

Adult male, 2/10/01.

99. OCHTHODROMUS GEOFFROYI (Wagler), Large Sand-Dottrel.

Hiaticula inornata, Gould, Birds Aust., fol., vol. vi., pl. 19 (1848).*Ochthodromus geoffroyi*, Sharpe, Cat. Birds Brit. Mus., vol. xxiv., pl. 217 (1896).

Six skins received, one being an adult male, the others females. Four of these skins, showing the same date and locality (Derby, 24/3/00), form an interesting series:—

a. Adult male in full summer dress.

b. Young female, showing sides of face and eyebrow rufous and a band of rufous and one of brown across the chest.

c. Female. No rufous on face, but a flush upon the brown chest-band.

d. Female. Centre of chest white, sides light brown.

100. OCHTHODROMUS VEREDUS (Gould), Oriental Dottrel.

Charadrius veredus, Gould, Birds Aust., fol., vol. vi., pl. 14 (1848).

Ochthodromus veredus, Sharpe, Cat. Birds Brit. Mus., vol. xxiv., p. 232 (1896).

Three females, 17/10/01, 18/10/01, 4/11/01.

They have broad cream foreheads; throats and chests uniform pale ruddy-brown.

101. ÆGIALITIS RUFICAPILLA (Temminck), Red-capped Dottrel.

Hiaticula ruficapilla, Gould, Birds Aust., fol., vol. vi., pl. 17 (1848).

Ægialitis ruficapilla, Sharpe, Cat. Birds Brit. Mus., vol. xxiv., p. 286 (1896).

Adult female, 2/9/01; immature male, 22/11/01.

[Nest with two eggs, 2/9/00. The bird ran and trailed its wings. I walked rapidly after it, but it would not fly. When it gained a few yards it lay flapping and struggling as if in death agony until I nearly reached it. Then it went on again. Like other birds, its manner is to draw one away from the nest. One egg was addled, the other "chipped," as I was coming home. The Derby Marsh is in season a great place for water birds, but not just now. The Marsh is an extensive level plain, covered with 1 to 2 inches of salt water at spring tides. After this it is a dusty plain, with salty sand, that nearly cuts into the eyes.]

102. ÆGIALITIS MELANOPS (Vieillot), Black-fronted Dottrel.

Hiaticula nigrifrons, Gould, Birds Aust., fol., vol. vi., pl. 20 (1848).

Ægialitis melanops, Sharpe, Cat. Birds Brit. Mus., vol. xxiv., p. 300 (1896).

One adult female, 6/2/00.

[As with the preceding species, it will try to draw you away from its nest, but mostly by running, and that remarkably fast. Eggs were found on 13th January, 1900.]

103. HIMANTOPUS LEUCOCEPHALUS (Gould), White-headed Stilt.

Himantopus leucocephalus, Gould, Birds Aust., fol., vol. vi., pl. 24 (1848); Sharpe, Cat. Birds Brit. Mus., vol. xxiv., p. 317 (1896).

Adult males, 1/2/00, 14/4/01.

Immature male, 1/2/00.

[I saw on 6/12/00 a large flock on a sandbank in the middle of the river at Breakaway.]

104. HELODROMAS OCHROPUS (Temminck), Green Sandpiper.

Helodromas ochropus, Gould, Birds Eur., fol., vol. iv., pl. 315, fig. 1 (1837); Sharpe, Cat. Birds Brit. Mus., vol. xxiv., p. 437 (1896).

- a.* Adult male, 19/1/01.
- b.* Immature male, 11/10/01.
- c.* Adult female, 18/10/01.
- d.* Immature female, 18/10/01.

These specimens record the first find of the species in Australia : *cf. Victorian Naturalist*, vol. xviii., No. 11, p. 164 (1902).

105. *TRINGOIDES HYPOLEUCUS* (Linnæus), Common Sandpiper.

Totanus hypoleucus, Gould, Birds Eur., fol., vol. iv., pl. 318 (1837).

Tringoides hypoleucus, Sharpe, Cat. Birds Brit. Mus., vol. xxiv., p. 456 (1896).

Four adults—males 8/11/01; females 18/3/01, 11/9/01.

[This species is common, but very wild. With a high tide and covered beach they are to be seen on the rocks at the water's edge preening their feathers or sleeping. One can then get a gunshot at them, but if not promptly killed they are difficult to secure, because of their cleverness in diving. When I wounded the one now forwarded (11/9/01) it fell into clear water. Upon trying to pick it up it went under, and swam as easily as a Grebe. It used its wings in the same manner as a Plotus, and moved rapidly through the water. I had to fire a second time.

When feeding this species seems to prefer rocks and shingle beach rather than the mud flats.]

106. *LIMONITES RUFICOLLIS* (Pallas), Little Stint.

Schanicus albens, Gould, Birds Aust., fol., vol. vi., pl. 31 (1848).

Limonites ruficollis, Sharpe, Cat. Birds Brit. Mus., vol. xxiv., p. 545 (1896).

a to *d.* Adult females, 22/3/01, 26/3/01.

Specimen *a* shows a few rufous feathers on throat and back. Rufous also appears along the margins of some of the inner secondaries.

Specimen *b* shows but a faint trace of rufous along the edges of certain of the inner secondaries. There is no trace of rufous upon the throat, but a few feathers of the back are faintly marked.

Specimens *c* and *d* bear no trace of rufous.

It seems to me as if the colour change is one of pigment rather than of moult of greys.

107. *HETEROPYGIA ACUMINATA* (Horsfield), Sharp-tailed Stint.

Schanicus australis, Gould, Birds Aust., fol., vol. vi., pl. 31 (1848).

Heteropygia acuminata, Sharpe, Cat. Birds Brit. Mus., vol. xxiv., p. 566 (1896).

Five skins, four males and one female. Males 21/10/01, 27/10/01, 22/11/00, 19/1/00; female 22/10/01.

The October birds have strong rufous and striped crowns; the January bird is very lightly marked. Upon the chest and

breast of this last specimen there is merely a faint tinge of rufous, while it is strong in the October-November specimens.

[I saw what appeared to be a flock of this species (Breakaway, 9/12/00) flying down the river. At each stroke of the wings the upper brown and under white showed alternately, but against the pandanus palms they could scarcely be seen when the wings hid the under white.] The upper brown surface renders a protective service in the wheeling and general movements of this species.

108. *ANCYLOCHILUS SUBARQUATUS* (Güldenst.), Curlew Stint.

Ancylochilus subarquatus, Gould, Birds Eur., fol., vol. iv., pl. 328, (1837); Sharpe, Cat. Birds Brit. Mus., vol. xxiv., p. 586 (1896).

One winter-plumage female, 7/11/01.

Rump brown like the back; upper tail coverts white. What most of us term upper tail coverts appears to be referred to by Dr. Sharpe as the rump.

109. *HYDROCHELIDON HYBRIDA* (Pallas), Marsh Tern.

Hydrochelidon fluvialis, Gould, Birds Aust., fol., vol. vii., pl. 31 (1848).

Hydrochelidon hybrida, Saunders, Cat. Birds Brit. Mus., vol. xxv. p. 10 (1896).

Two adult males, 12/4/01. Bill, 1.15 inches.

[This species is at Livuringa (22/2/01, 4/5/01). It flies about 40 feet above the water, and then diving goes under with its head and body and half-closed wings. The wings do not go under the water. Sometimes a sharp turn is made just before reaching the water, and it shoots upward rapidly into the air again. I should consider the fish changed its position. It feeds largely on small "sardine-like" fish.]

110. *NYCTICORAX CALEDONICUS* (Gmelin), Night Heron.

Nycticorax caledonicus, Gould, Birds Aust., fol., vol. vi., pl. 83 (1848); Sharpe, Cat. Birds, Brit. Mus., vol. xxvi., p. 158 (1898).

Immature female, 18/5/01.

111. *NOTOPHOYX NOVÆ-HOLLANDIÆ* (Latham), White-fronted Heron.

Ardea novæ-hollandiæ, Gould, Birds Aust., fol., vol. vi., pl. 53 (1848).

Notophoyx novæ-hollandiæ, Sharpe, Cat. Birds Brit. Mus., vol. xxvi., p. 109 (1898).

Adult female, 4/12/01.

112. *NOTOPHOYX PACIFICA* (Latham), White-necked Heron.

Ardea pacifica, Gould, Birds Aust., fol., vol. vi., pl. 52 (1848).

Notophoyx pacifica, Sharpe, Cat. Birds Brit. Mus., vol. xxvi., p. 111 (1898).

Immature female, 4/7/01.

113. PHALACROCORAX SULCIROSTRIS (Brandt), Little Black Cormorant.

Phalacrocorax sulcirostris, Gould, Birds Aust., fol., vol. vii., pl. 67 (1848); Ogilvie-Grant, Cat. Birds Brit. Mus., vol. xxvi., p. 376 (1898).

One unsexed skin, November, 1901.

This skin is light brown practically all over the body, tending to blackish-brown on the flanks and rump. The oily green colour, except on the rump and upper tail coverts, is wanting. Where the feathers should be ash in the middle and margined by a black band they are brown in the middle with a lighter brown as a margin. It could safely be called the Little Brown Cormorant.

Field Observations on Western Australian Birds.

BY ALEX. WM. MILLIGAN, PERTH.

THE following notes and observations relate to birds secured or seen by the writer on two short expeditions made by him in the month of October and at Christmastide of last year, and in that portion of the south-west division of Western Australia known as the Margaret River, and particularly a strip of country having for its northern limit Cowaramup Brook and its southern limit the Margaret River. The first expedition occupied 14 days, and the last five days.

The nature of the country was of a diversified character, consisting firstly, on the immediate littoral, of high limestone hills, covered with sand and clothed on their summits and ocean faces with dwarf scrubs, knee-high, and, behind and between those hills, of sheltered gullies or pockets carrying "stinkwood," dryandra, and peppermint scrubs; secondly, of a narrow tract of lower, flat, sandy, moist country, carrying "red gums," banksia, tea-tree, and "blackboys" (grass-trees); and, thirdly, of granite and ironstone ranges, bearing jarrah trees. Intersecting the whole at irregular intervals were brooks taking their sources in these ranges and flowing either openly to the sea or hiding their identity underground, and eventually issuing out of the high sea cliffs and thence reaching the ocean through narrow and limited fertile flats. Along the course and in the vicinity of the brooks (except where they came within the direct influence of the ocean winds) were belts of the gigantic clean-limbed karri trees, with patches of "willow" and other scrubs undergrowing. The limited brook flats carried a burden of sage-bush, blister-bush, and other low-growing scrubs.

Each class of country had its feathered denizens peculiar to it, although, needless to say, many avi-faunal forms were, speaking in a limited sense, cosmopolitan.

For example, the dwarf coastal scrubs furnished ideal and

exclusive homes for the Emu Wrens, Spotted Scrub-Wrens, Black-throated Coachwhip-Birds, and Bristle-Birds. The "stinkwoods" and dryandra scrubs furnished similar homes for the "Gnous" and Broad-tailed Tits; the banksias and red gums for Spine-bills, Red-tipped Pardalotes, and Red-capped Parrakeets; the jarrah trees for the Rufous Tree-Creepers; the karri belts for the Melithrepti and Spotted Pardalotes; and the brook flats for the Red-eared Finches.

My great surprise on my first trip was the abundance of bird-life in the locality above indicated, both in species and individuals, and I declare that neither in Victoria nor Queensland have I seen so many species and individuals within a similar area to that traversed. Upon the coastal hills I can say without the slightest exaggeration that there were tens of thousands of Leaden Crow-Shrikes and "Twenty-eight" Parrakeets. The brook thickets were literally alive with the restless, pugnacious Long-billed Honey-eaters, whose querulous voices drowned all other sounds. In the dryandra scrubs hundreds of Wattle Birds gurgled and barked, and in the karri forests the continuous scold of the Melithrepti and the ceaseless repetition of the monotonous "sleep-baby" call of the Spotted Pardalote became distinctly wearisome.

On the other hand, the whole or partial absence of many species common in and around Perth, and even at Busselton (only 30 miles northward of the Margaret River) was most noticeable. For example, the Brown Honey-eaters, so common about Perth, were not to be seen. Of the Long-billed Magpies I only saw two pairs, although at Busselton they were very common. Of the Singing Honey-eaters, another very common form at Perth, I only saw one pair, and of the Pallid Cuckoos, which two months before had arrived at Perth, I never saw or heard one. It would almost appear as if the Pallid Cuckoos never entered the forest country, but left it wholly to the Fan-tailed Cuckoos, which were fairly numerous. The Bee-eater, which is so common about Perth from October to March, is unknown in the district under notice.

Although I failed in achieving the primary object of my first expedition—namely, that of securing a skin of the female *Atrichia clamosa*, nevertheless I was gratified with the general result, for I not only secured a new species of *Sphenura* (see *Emu*, vol. i., p. 67), and many uncommon birds hereafter noted, but I also collected a lot of interesting botanic specimens, included in which I believe there will prove to be a new orchid. In addition, I learned and recorded some of the folk-lore and legends of the south-west aborigines, and also the calendar by which they know the arrival of certain fish to the local waters by the blossoming of certain trees and shrubs. Being in the neighbourhood of the now famous Margaret River caves I did not miss the opportunity of seeing them, although from an

ornithological point of view I regarded the time as wasted. A description of all these would doubtless prove interesting matter to many, but it is, of course, outside the scope of an ornithological paper.

My second journey, at Christmas time, was fruitful, inasmuch as I was fortunate enough to witness the "Gnou" close up one of its immense nesting mounds, and also to secure three additional specimens of the new *Sphenura*.

Appended is a list of the birds secured or seen, with relative notes and observations :—

UROAETUS AUDAX (Wedge-tailed Eagle).—First trip.—These were observed frequently soaring and circling at great heights. An old nest was seen at Cowaramup Brook. Second trip.—Whilst walking through the peppermint belt I disturbed one in repose. By the iron-black plumage I took him to be a male adult. The aboriginal name is "Walgil."

HIERACIDEA BERIGORA (Striped Brown Hawk).—First trip.—These birds were fairly numerous. Evidently they had begun to build, for one passed me with a long twig. The twig was carried under, and parallel with, the body. It is locally known as the "Chicken Hawk." The name given it by the aborigines of the south-west is "Don Don."

PANDION LEUCOCEPHALUS (Osprey).—First trip.—Saw birds several times along the line of coast hills ; probably they were the one pair of birds. I inspected a nest at Cape Mentelle, which contained two eggs, one of which I took, and presented to the Perth Museum. The eggs were beautifully marked with irregular blotchings and splashes of rich sepia. I learned locally that it was the same nest which Mr. Editor Campbell photographed some 11 years ago. The nest is a large structure of twigs and roots, and measures, roughly speaking, 3 feet high, 3 feet in diameter at top, and about 6 feet at base. Collections of fish bones were present on the outer rim of the nest cavity, as also a piece of the "pig-face" mesembryanthemum in full growth. Owing to the joint efforts and representations of myself and Mr. B. H. Woodward, the director of the Perth Museum, the nest has been placed under the protection of the Margaret River Cave Warden. It would be interesting to know if the birds who now use the nest are the same pair as used it in Mr. Campbell's time.

CORVUS CORONOIDES (Crow).—These birds were very numerous, especially in the karri forests near the ocean. A local notion prevails that the bird can only count two, and the reason given for such, although ingenious, is hardly logical. The result is arrived at by the following alleged facts :—If one person of a party of three directly approach the bird to within a reasonably unsafe limit to the bird, he will fly away ; similarly if the second person, together with the first, so approach. If, however, the third person, in concert with the other two, approach, the third making but a slight deviation (the two remaining stationary), he can walk straight to the bird without its moving. Assuming these facts to be correct, the matter appears to be one affecting "scope of vision" rather than "notation."

The Western Australian bird is true to tradition in that he is abnormally cunning. The following ruse, in securing a specimen, has been adopted with success :—Having observed a Crow in the vicinity, set a light to a "blackboy" (the local name of the grass-tree), and then conceal yourself. As the wreaths of greenish-coloured smoke ascend, carrying with them as they do a strong aromatic resinous smell, the bird will quickly call and stealthily approach from tree to tree the vegetable pyre, when he may easily be shot. The aborigines of the south-west call the bird "Kwaggum." As in the east, these birds have marked frugivorous proclivities, and show a distinct partiality for Cape gooseberries and figs.

STREPERA PLUMBEA (Leaden Crow-Shrike).—As already observed, this is one of the most numerous birds on the coast. He is locally known, and, in fact, everywhere throughout the State, as the "Squeaker." In springtime he seeks the coast to feast upon the land snails, which are abundant on the coastal hills. In the south-west he is regarded as a "weather prophet," and the result of my own observations is that immediately preceding rain he drops his almost ceaseless clamorous call (which gives him his local name), and utters a musical double note at long intervals. On the occasion of my first visit they had not begun to build. On the occasion of my second visit they, in common with the Crows, were committing havoc in the homestead garden among the Cape gooseberries and figs. His aboriginal name is "Bella."

COLLYRIOCINCLA RUFIVENTRIS (Buff-bellied Shrike Thrush).—These were fairly abundant on each visit. On the first visit my faithful retriever, who has assisted me greatly for many years in my bird expeditions, discovered a young one, almost fully fledged, on some bare ground at the foot of a red gum.

GRAUCALUS MELANOPS (Black-faced Cuckoo-Shrike).—I saw many of these on each visit. On the first I observed one bird with food in its bill for its young.

PETROICA CAMPBELLII (Western Scarlet-breasted Robin).—These were fairly numerous in the forest and scrub country. I saw two fully fledged ones in company with the parent birds.

PSEUDOGERYGONE CULICIVORA (Southern Fly-eater).—I saw and heard many of these quaint little whistlers.

MALURUS SPLENDENS (Banded Wren).—I secured several specimens of this lovely bird. On my first visit, in October, they were then only beginning to build.

MALURUS ELEGANS (Red-winged Wren).—On my first visit I secured one specimen (a male) in some "willow" undergrowth in a karri forest. I could not ascertain, however, whether or not they had begun to build. Judging by the note of the male bird I am inclined to think that nesting season was with them only approaching. On the second visit I saw a company of them in the Ngooocardup "stinkwoods."

RHIPIDURA PREISSI (Western Fantail).—These charming little birds were very plentiful on the coastal brooks. Although I was convinced the birds were nesting I was unable to find a nest. These tame creatures, although held in high repute by the "whites," are not so by the aborigines. With the latter they are regarded as a bird of ill omen. If upon the morning of the departure of a hunting expedition one of these little fellows put in an appearance at camp the "blacks" at once abandoned the expedition.

RHIPIDURA TRICOLOR (Black and White Fantail).—There were many of these about the homestead discharging the very useful duty of freeing the cows of plaguesh flies.

SEISURA INQUIETA (Restless Flycatcher).—On my first visit I secured two specimens in the karri trees on Cowaramup Brook.

STIPITURUS MALACHURUS (Emu Wren).—These feathered pigmies were very abundant in the low-growing scrubs and prickly undergrowths on the coast hills. On the occasion of my first visit the birds had finished nesting, for in every instance the young birds (of which I saw a considerable number) were fully fledged. Their weak little notes (not as loud as that of a cricket) always betrayed their whereabouts. I found there was but little difficulty in flushing the birds once, but that after that the task was hopeless, although I could see them running in through the prickly undergrowth like mice. I secured several specimens with the gun, and in one instance I snapped a young one with the hand low down as it flew past me. Again, on my

second visit, they, as might be expected from their being local in habit, were very abundant.

ACANTHIZA INORNATA (Plain-coloured Tit).—I secured several on my first trip. The birds had bred, and had their young with them.

ACANTHIZA APICALIS (Broad-tailed Tit).—These were abundant in the "stinkwood" scrubs. It is rather a ludicrous sight to see one of these little fellows suddenly mount to a point of vantage (usually a dry stinkwood in the scrub), and, elevating his tail, utter a series of sharp notes with all his vocal might. Judging by the actions of the birds I should say they were only beginning to nest.

ACANTHIZA CHRYSORRHOA (Yellow-rumped Tit).—These useful little birds were often to be seen in companies about the homestead and in the open lands. They had, I think, already brought out their first broods, for I heard young ones in a nest at South Perth in the middle of winter. Subsequently, in January, I heard young ones in the same nest, and saw the parent birds carrying food.

PSOPHODES NIGROGULARIS (Black-throated Coachwhip-Bird).—The capture of this bird proved to be one of the most interesting incidents of my first trip. It is locally known as the "Rain-Bird," by reason of the fact that immediately preceding rain it seeks the summits of the coast-hills and utters a series of beautiful, clear, liquid, penetrating notes, which are difficult to imitate. It is quite possible that its name is fully justified, for its food consists in part of the land snails which are found on these hill summits, which forms in dry spring weather are apparently lifeless, but when the atmosphere is moist or after a shower of rain are full of vitality and may be found creeping up the stems and branches of the dwarf scrub. Instinct or experience would teach the bird to seek such places for this particular class of food immediately precedent to rain, and, while seeking such, it would naturally utter its notes. The notes of the bird are well known to both the "blacks" and the old colonists, but both allege the bird has never been seen. That, I think, is probably true, for with the aid of my trained dog and all the bushcraft I could gather, it took me four days of persistent hard work to get a glimpse of one. I have sought and secured the Pittas in Queensland, the Lyre-birds in Victoria, as also *Psophodes crepitans* in the latter State, but the securing of specimens of such birds is simple as compared with getting the Black-throated Coachwhip-Bird. As might be expected, the bird is a ground runner, and the difficulty in seeing it is due to such fact, and the additional one that it never leaves the knee-high dwarf scrubs. These scrubs are so thick and strong that in many places I could stand on their even upper surfaces without sinking. The ruse I eventually determined to adopt in securing the bird was, after having located its probable whereabouts (a most difficult task), to fire the cylinder barrel of my gun into the particular place and thus endeavour to cause it to take wing; pursuing such plan, and having located the whereabouts of the bird and fired without flushing it, before I had time to feel disappointment at the failure of my ruse the bird ran across the corner of a small patch of burnt scrub, and snap-shooting with my choke barrel, and aided with the best of luck, I stopped my prize. The locating of the bird's whereabouts is a most difficult task, for he is a perfect ventriloquist. Whilst in pursuit of him I have approached stealthily to a place from where his notes appeared to come in the first place—I would then have to await the prolonged repetition of his call. The first notes would appear to come as if the bird were 300 yards away—degree by degree they would come nearer until within a few yards. Suddenly they would appear to the right as if the bird had changed its position—then to the left, and next moment behind me, and usually by the time the call was finished I located the bird (rightly or wrongly) where I first imagined it to be. On my second visit a second specimen was secured after a long chase, but on this occasion there were four persons in pursuit instead of one, and the bird

showed less shyness—due, I think, to the immediate presence of its nest or young. Subsequently we found near the locality a vacated grass nest close to the ground, and on examining the lining feathers we found several feathers resembling in colour and shape those of the bird we had shot.

EPHTHIANURA ALBIFRONS (White-fronted Chat).—On my first arrival at Ellensbrook homestead these birds, which had been absent for some time, were described to me. Before leaving there, and whilst lying awake one morning at daylight, I heard what I thought their call. I at once got up and went to the oozy black springs near the homestead and saw a pair of birds. On my second visit, at Christmas time, they were there in great numbers.

GYMNORHINA DORSALIS (Long-billed Magpie).—I only saw a pair of these birds in the locality on the first trip, and four (apparently that year's offspring added) on my second trip. I learned that a pair was seen for the first time in the neighbourhood the year previous. The birds were not familiar with their surroundings, and very shy, and would not permit of close observation. Thirty miles northwards hundreds may be seen in the open country.

EOPSALTRIA GEORGIANA (Grey-breasted Shrike-Robin).—Many of these were observed. It is more than probable that they had finished nesting, as I had seen fully fledged young at Perth in the late winter.

EOPSALTRIA GULARIS (White-breasted Shrike-Robin).—Mr. Campbell, in the account of his trip to Western Australia, speaks of these birds as if they were easy of observation. My experience is the reverse. In my first trip I only saw two birds, only one of which I secured, and that only with the greatest difficulty, owing, firstly, to their inhabiting the dense thickets on the coastal brooks, and, secondly, their very shy disposition. The one I secured cost me hours of travail. When the bird was pressed hard in pursuit it uttered a series of most cat-like calls, and at first I was not certain that the author of them was a bird. The notes, which were uttered with great distinctness and much vigour, resembled "kāwhow kāwhow whowāh whōw." Near the gape of the specimen I secured a large tick was attached, and which, even with a fairly strong pressure of the blade of my pocket-knife, I could not detach.

PACHYCEPHALA OCCIDENTALIS (Western Thickhead).—These were, comparatively speaking, numerous in the karri and red gum belts. They had not begun to nest at the time of my first visit.

CLIMACTERIS RUFA (Rufous Tree-Creeper).—I secured one specimen and saw several others on my first visit. The colour of the plumage harmonizes not only with the rufous-coloured bark of the jarrah trees but also with the ironstone gravel country upon which the same trees grow. These birds are only found in the jarrah forests.

SITTELLA PILEATA (Black-capped Tree-Runner).—I saw several companies of these birds on the first trip, and as they were in companies I assumed they had not begun to nest.

ACANTHORHYNCHUS SUPERCILIOSUS (White-browed Spine-bill).—These birds were numerous in the banksia and tea-tree country. I did not discover any nests in October; probably they had nested, for I had already observed nests and young near Perth in early September.

ZOSTEROPS GOULDII (Green-backed White-eye).—These birds were numerous everywhere. I observed several young ones fully fledged.

MELITHREPTUS CHLOROPSIS (Western White-naped Honey-eater).—These birds, in common with the Spotted Pardalotes, occupied the karri forests, which they never appear to leave.

PTILOTIS SONORA (Singing Honey-eater).—Although this is one of the most common birds about Perth, they were very rare in the country

traversed. I met with only one pair. They appear to peter out as you travel southward.

MELIORNIS LONGIROSTRIS (Long-billed Honey-eater).—This is one of the most common birds on the south-west coast—not only in the brook thickets but also in the stinkwoods, and in fact all along the coast they were in great numbers. Their vivacious, restless movements, combined with their pugnacity towards other birds, and their querulous voices, impart much life to the landscape. I saw one nest which contained two chocolate-haired young ones. I saw very many full-fledged young ones when pushing through the thickets.

MELIORNIS MYSTACALIS (Moustached Honey-eater).—These were numerous, but principally in the thorny dryandras on the limestone hills. Their peculiar, weird notes always betrayed their whereabouts.

ACANTHOCHÆRA LUNULATA (Little Wattle-Bird).—These noisy birds were very plentiful in the sheltered pockets in the sea-hills.

PARDALOTUS ORNATUS (Red-tipped Pardalote).—Not many of these birds were observed, and those that were appeared to confine themselves to the "red gum" country. I observed a pair passing in and out of a small hole of a red gum tree, in which they evidently were nesting.

PARDALOTUS PUNCTATUS (Spotted Pardalote).—As already observed, these birds, in common with the *Melithreptus chloropsis*, shared honours in point of numbers in the karri forests. Locally they are called the "Head-ache" bird, owing to the almost ceaseless repetition of their monotonous call.

HIRUNDO NEOXENA (Swallow).—These birds were numerous in the vicinity of the caves and limestone cliffs. I was directed to one cave, known as the "Dingo Cave," situated in the midst of one of the dense "stinkwood" areas. For some considerable time I searched without success, and was about to desist from further search when I observed the Swallows from time to time making for the one destination. By following them I had not any difficulty then or thereafter in finding the cave. In this particular cave I discovered many of their nests, some containing eggs and some containing young.

ANTHUS AUSTRALIS (Pipit).—In the homestead paddock at Ellensbrook there were several pairs. They were also fairly abundant on the sea hills. The manager of the farm showed me on my first visit a nest containing two eggs.

ZONÆGINTHUS OCULATUS (Red-eared Finch).—I saw a great number of these charming little Finches, as also their bottle-shaped nests. These latter, however, were old ones. They were just beginning to build on my first visit. Many of the birds could be seen carrying the stems of long dry grass whilst flying. They appear to be a very local bird, for I only saw them at Ngoccardup Brook, and then within an area of 20 acres. Their call is a peculiar series of notes, uttered softly, and resembling "kwinkee wee wee wee."

CACOMANTIS FLABELLIFORMIS (Fan-tailed Cuckoo).—These birds were fairly numerous in the karri forests, but confined to them. On my first visit I secured two specimens. On my second visit two young birds were shot. The under-surface of the plumage was in colour between chocolate and chestnut, and faintly blotched with a darker shade.

CHALCOCOCCYX FLAGOSUS (Bronze Cuckoo).—These also were numerous in the karri forests.

GLOSSOPSITTACUS PORPHYROCEPHALUS (Purple-crowned Lorikeet).—I observed several of these birds on my first visit at Cowaramup Brook. Evidently the locality has been a favourite nesting-place for these lorikeets, as the word "Cowaramup" signifies, in the language of the south-west

aborigines, "the resort of the Cowara," "Cowara" meaning the "Purple-crowned Lorikeet."

CALYPTORHYNCHUS BAUDINI (White-tailed Cockatoo).—Great flocks of these birds were observed on each visit.

CALYPTORHYNCHUS STELLATUS (Red-tailed Cockatoo).—These birds were not present on my first visit. From local sources I learned that they bred in the forests farther inland and came towards the coast country about Christmas time. On the occasion of my second visit, at that period of the year, I saw two or three pairs.

PLATYCERCUS ICTEROTIS (Yellow-cheeked Parrakeet).—This bird is called the "Rosella" in Western Australia. I saw many of them on my first visit, principally in the karri forests. I was fortunate one day in seeing a veritable battle royal between two pairs of birds. One pair had selected a spout in a high karri tree as a suitable place for nesting. Another pair in search of such a place sought to occupy the selected home, which naturally was highly resented by the lawful owners. At a given signal, or apparently so, the male and female bird of each pair flew straight at the other, and, meeting in mid-air, fought with great fury, using beaks, wings, and feet, and clamouring greatly. When exhausted each pair returned to its tree. After a short respite the engagement was renewed with equal fury and noise, but temporary exhaustion resulted in another rest. After a series of these engagements and restful intervals the intending dispossessors drew off, or more correctly speaking, flew off, vanquished, which gave occasion for much more clamour and psittacine thanksgiving by the victors.

PORPHYROCEPHALUS SPURIUS (Rep-capped Parrakeet).—I observed several pairs of these birds, but only in the red gum trees. Whilst sitting at lunch one day during my first visit, under the grateful shade of a red gum tree, I was struck on the head by one of its cup-shaped seed capsules. Attributing the falling to natural causes I paid no further attention to the circumstance until I was struck with a second and third capsule. Examining them I found they had been freshly gnawed close to the stem. After closely scanning the thick foliage at the top of the tree I could just see through the very thick leaves the form of a bird. A well-directed shot secured for me a very handsome male bird of this species.

BARNARDIUS SEMITORQUATUS (Yellow-collared Parrakeet).—These birds were very abundant everywhere. They and the Leaden Crow-Shrikes were more in evidence in the coastal hills and scrubs than any other birds. Within an oblong area of, say, three miles by one, there must have been hundreds of thousands of them. Some early birds were just beginning to nest. A lipped hole in a karri tree is usually chosen for the purpose. On the occasion of my second visit the birds had evidently retired into the forests, for they were not nearly so numerous on the coast.

PHAPS ELEGANS (Brush Bronze-wing).—I flushed many of these birds in the sage scrubs during each visit. I regret to say that on many occasions my sporting instincts asserted themselves, and I could not restrain myself from wing shots. I learned locally that the birds nest about Christmas time.

TURNIX VARIA (Painted Quail).—On my first visit my dog flushed a bevy of four on a limestone hill overlooking the sea. Not having my "Hollis" with me I used the specimen gun on the last bird. The shot charge being only No. 10 shot the bird got away, but my dog subsequently secured and retrieved it. It proved to be that year's bird. I find these so-called Quail very early breeders, having obtained young ones as early as August.

BURHINUS GRALLARIUS (Stone Plover).—These creatures frequently visited the homestead paddocks at night, as evidenced by their weird call. I did not, however, see any.

ÆGIALITIS RUFICAPILLA (Red-capped Dottrel).—I secured several of these on the sea beach.

ÆGIALITIS CUCULLATA (Hooded Dottrel).—On my first trip I shot several of these birds, which, comparatively speaking, were numerous. Whilst searching for the small "cowries" in the line of shells above high-water mark, my companion discovered three eggs placed in a depression on the beach. On my second trip I discovered, on the beach at Ellensbrook, two young ones concealed in a depression in the sand impressed by a cow's foot. The parent had previously adopted the characteristic ruse of feigning to be grievously wounded. I subsequently found what probably was the nest, if it can be so called, with an addled egg. The egg was placed in a similar depression, but surrounded with numbers of broken sea-shells, which evidently had been collected.

LARUS NOVÆ-HOLLANDIÆ (Silver Gull).—In the ledges of rock at the base of the Pandion's nest at Cape Mentelle these birds were nesting. Some of the nesting-places contained fully feathered young, others young in a less advanced stage, and others again eggs. This was in the first week of October.

NOTOPHOYX NOVÆ-HOLLANDIÆ (White-fronted Heron).—Single birds were observed on one or two occasions on the seaboard.

PHALACROCORAX CARBO (Black Cormorant).—Occasionally a bird could be observed perched on the granite boulders near the surf.

PHALACROCORAX MELANOLEUCUS (Little Cormorant).—These birds were seen occasionally on the coast. Colonies of them, some six weeks ago, were laying eggs on some rocky islets a short distance south from Fremantle. I have seen scores of nests containing young in the inland bulrush swamps during Christmas time, and on one occasion a Darter's nest containing young was in the breeding colony.

CASARCA TADERNOIDES (Shieldrake).—I observed several of these on a sand spit near Cape Mentelle. These were the only ducks I saw on either visit.

LIPOA OCELLATA (Mallee Fowl).—Although I had the assistance of both "whites" and "blacks" on my first trip I was unsuccessful in discovering a mound in use. Several disused or wholly abandoned ones were seen in the "stinkwoods." On my second trip, at Christmas time, I was more successful, one being found by the manager of the farm in the Ngoccardup "stinkwoods." It was situated on the skirt of the scrub, just where the base of the hill touched the lower ground upon which the scrubs grew. The mound was clear of any runnel or watercourse. All around the base of the mound the soft sand had been excavated by the birds, leaving the roots of the adjacent shrubs bare. The morning (about 10 a.m.) being hot, the top of the mound had been "sauced." We dug away the top soil and *débris* without meeting with any eggs, but as after events proved they were there, and we had not dug deep enough into the fermenting *débris*. The measurements taken at the time were, approximately, 15 feet over all and 54 feet in circumference at its lower but irregular base.

I determined to make the next visit alone, in the hopes of making observations of the bird at work. I concluded that the mound contained eggs, or that eggs were about to be deposited, otherwise the nest would not have been "sauced." I therefore chose a morning some two days later, which had the appearance of rain, as I surmised the birds would probably be putting an apex on the central depression at the top. My surmise proved to be correct. I reached the mound shortly after 8 o'clock, and after carefully examining it I found that I had disturbed the bird in its labours. I determined to wait, and having ascertained the direction from which a slight breeze was blowing I concealed myself in the adjacent undergrowth higher up the hill and awaited events. A light, warm shower of rain



Egg-mound of Mallee Fowl in "Stinkwood" Scrub, W.A.

FROM A PHOTO. BY C. P. CONGRAVE.

descended, after which the sun shone strongly. After waiting some twenty-five minutes one of the birds put in an appearance at the top of the mound, from which he keenly surveyed the immediate surroundings. Evidently satisfied that there was no lurking danger, he began his work. His energies appeared to be first directed towards filling the centre of the crater. This he did by standing on the outer rim of the crater, with his tail turned towards it, and throwing the soil therefrom into the centre, the earth being seized by one claw and thrown backwards into the middle of the crater. The seizing and throwing were performed very rapidly, and one foot or leg only made use of at a time. When this became tired the other one was used, the bird in the meantime performing a circuit round the rim of the nest. The soil composing the rim having been thus used for building up the centre into an apex naturally left a circular cavity. This the bird filled by walking a little lower down and throwing up the soil in a similar manner. This displacement again caused unevenness in the place from which the last soil had been cast up. This was remedied by soil being thrown up from the base. After the structure had been thus built up the bird walked around the inclined slope of the mound, adjusting here and levelling there small portions which were out of plumb, so to speak. Having completed this to its satisfaction, and given a final scan, the bird walked leisurely away down the opposed incline of the mound into the scrub. The operation of rebuilding occupied about 20 minutes. The bird, at intervals, would lift its neck and head to its full height and listen and watch. During my observations I became so cramped that I could only with difficulty and pain arise. I had been 45 minutes in the one position, resting upon my right arm, but I dared not move lest I alarmed the bird. To accentuate matters the persistent bush flies sought the corners of my eyes, and the small ants, which abounded, crept up my shirtsleeves in scores; and, to further increase my torments, if such were necessary, the grasshoppers alighted on my supporting hand and nipped the skin. These I had to suffer, for one single movement of mine would have alarmed the wary bird. At times, too, the continual focussing of the sight upon the one object produced in me a mild form of mesmerism, and bird and mound would momentarily vanish.

From the rapid and persevering manner in which the bird seized and cast up the soil I am of opinion that the wings are not used in the process of mound-building.

Exploration of the North-West Cape.

BY THOMAS CARTER.

WE left Point Cloates station on 10th June in buckboard buggy, with provisions (meat excepted) for three weeks, and bucket, rope, and shovel for procuring water. The morning was clear and bright, with a stiff north-east gale blowing, but when we had dinner at the N. paddock fence, 15 miles on the road, clouds began to rise from seawards. The road is level, but heavy at times, the coast sandhills lying on our left and the rocky range on our right, getting higher as we go north. Not many birds are to be seen on this part of the journey, as the country is open grass or soft spinifex. An occasional Little Quail or Ground-Lark is flushed, and now and again a Spotted Harrier sails past, out of gunshot, beating the ground for lizards. We called in at a sand well at 4 p.m. to get water, and arrived at the mouth of the Yardie Creek at sundown, where we had

purposed camping. But as it was then thundering and raining, with every prospect of a wet night, we decided to go half a mile further, where are some convenient caves. The other white man who accompanied me thus far to lay baits for troublesome dingoes (wild dogs) and our two natives here found snug, dry quarters for the night. Next morning we walked up the range near the creek to see if any Sea Eagles were nesting. The Yardie Creek contains sea water for about two miles, full of fish. The banks are level near the beach, but rise rapidly, and half a mile from the sea are sheer cliffs over 100 feet in height, with, in places, 40 feet of salt water at their bases. Above the salt water is a deep pool of "sweet" water, surrounded by bulrushes, and past this are two smaller pools of good fresh water. Beyond here the creek winds through the ranges, rugged cliffs on either side for miles to the eastwards, the bed of the creek being formed of giant boulders and gravel, with stunted gum trees and fig trees growing sometimes rather thickly. Though the highest range may not exceed 1,000 feet in height the place is extremely wild and romantic. Through our binoculars we inspected a White-bellied Sea Eagle's nest on a ledge of the cliff. It contained eggs last year, but repairing operations only were apparently in progress, as was the case with an Osprey's nest, built on the edge of a cliff, in a most convenient place to walk up and inspect. We proceeded on the range past the pools, then scrambled down into the gorge and visited a vast cave. Water drips from the roof, forming two basins of delicious cold water, which are much frequented by wild dogs. Here Painted Finches (*Emblema picta*) and Kcartland Honey-eaters (*Ptilotis keartlandi*) were quenching their thirst, and we followed their example, preparatory to a rough walk back down the bed of the creek. Here the loud, rich notes of the Buff-bellied Shrike-Thrush (*Collyriocincla rufiventris*) may be heard all the way. Flocks of Bare-eyed Cockatoos (*Cacatua gymnopsis*) were flying overhead; Kcartland, Singing, and Brown Honey-eaters abundant in the low trees, and occasionally a Flower-pecker (*Dicaeum*) seen, and small coveys of Plumed-Pigeons (*Lophophaps*) sunning on the great boulders and drinking at the little dubs left by last night's rain. We shot a rock kangaroo on the way to camp to serve as baits for dogs and tucker for the road.

After dinner my man returned to the station, and self and native started north again. We turned into the sand-hills to dig out water for horses, but it was very salty, though fortunately not deep down. Coming on, we kept a sharp look-out for the Carter Desert-Bird (*Eremiornis*), which has been frequently seen here, but failed to note one. Pied Honey-eaters (*Entomophila leucomelas*) were fairly common, and the cheerful notes of the Field-Wren (*Calamanthus*) heard from many a bush. A comfortable camp on a springy bed of soft spinifex, and next morning we reached another large creek, similar to the Yardie,

but with a dry bed. I got out to walk as the buggy jolted over half a mile of boulders and coarse shingle. The sea reef comes close to the beach here, which is formed of shingle and broken shell. A pair of Large-billed Stone Plovers (*Orthorhamphus*) flew heavily away in company with several Reef Herons and Caspian Terns. There is always an Osprey's nest about here, and this year it is an immense structure, built on a prostrate log left by some flood. Standing on the log I was just able to see over the edge of the nest, which was more than 5 feet in height and about 3 feet in diameter. It contained no eggs, but fresh tufts of seaweed and coarse grass were being added to the lining. Close to the nest was a sheet of flat rock, with numerous cavities, which I was pleased to see were filled with rain water, and it saved us cleaning out the next "soak," which is in an awkward place, with only very moderate quality of water. I coo-eed to the native to bring the buggy, and we hobbled out, then walked over the flat to where the creek emerges from the ranges between great cliffs. We scrambled along the top on one side to inspect a Wedge-tailed Eagle's nest previously seen. It is built on a stunted tree growing out of the face of the cliff, but on getting above it we saw it was apparently deserted, so returned down the bed of the creek, shooting two handsome striped rock wallaby on the way. We went further north in the afternoon and camped early to explore another similar deep gorge, but without any result except temporarily losing my dog, who, seeing so many rock kangaroo, or wallaby, hopping towards the flat for their evening meal, could not resist a chase, but returned safely, and I shot a kangaroo to take on the road. Next morning the travelling was heavy, as the sandy ground was honeycombed by a species of rat, making the horses afraid to move. We passed a large belt of mangroves where novelties in the bird line have been previously procured, but had to proceed two miles further to procure water. This is about 10 feet down a cave, which was almost filled with kangaroo and wallaby bones and dung, sticks, sand, stones, &c. An hour's hard work with the shovel procured a supply of black, evil-smelling water, but our horses drank it. After dinner we took the water-bags and prospected the range in hopes of finding more rain water, and were successful. Camped in the dense thicket round the water. Wedge-bills' (*Sphenostoma*) and Spiny-cheeked Honey-eaters' (*Acanthochaera ruficularis*) songs were heard all over, but the birds were invisible. The sand-flies worried us dreadfully until sundown, then the mosquitos relieved them.

Next morning we went back to the mangroves. In one place a large open sheet of water is surrounded by mangroves and studded with patches of rock and dead logs. Pelicans, Curlews, White-fronted and Reef Herons, and Crested Terns were abundant. There were also a few Red-capped Dottrels (*Egialitis*

ruficapilla), Little Stints (*Limonites ruficollis*), and a great flock of Teal, the handsome *Nettion castaneum*. After some stalking I succeeded in shooting three, but retrieving them was troublesome work, as between the rocks and stumps one is liable to sink in unknown depths of mud. The native resolutely refused to attempt it. We decided to have ducks for dinner, and I handed to the native what I took to be a female to pluck, while I first skinned what seemed to be a handsome drake. However, his bird proved to be a young male, without a vestige of any glossy-green head or neck, while my bird, which could not be distinguished from an almost full-plumaged male, proved to be a female. The glossy-green head and neck and rich red-brown breast were not pronounced. On some flat rocks left bare by the tide a party of Waders was feeding. Not being sure of their species a charge of No. 6 shot proved them to be Grey-rumped Sandpipers (*Heteractitis brevipes*) by securing three. After dinner we forced our way into a very dense patch of mangroves, but for some time all we could see were Yellow White-eyes (*Zosterops lutea*) flitting above us and Western Fantails (*Rhipidura preissi*) hovering within arm's length to feed on the countless mosquitos that accompanied us, when my attention was attracted by a loud, clear song quite new to me. Keeping still, the bird came close to us, and was secured without being much mutilated, as is so often the case in shooting specimens in mangrove growth. It is what I take to be undoubtedly the Black-tailed Thickhead (*Pachycephala melanura*), and is a south and west record so far. We spent some time here, but failed to see more specimens. Two more Ospreys' nests were inspected, both empty, and what seemed to be a new nest of the White-headed Sea Eagle—at least, one of these birds came from it. It also was empty. Nankeen Herons were constantly roused out of their afternoon siesta, but nothing more of importance seen. Not a sign of any Shrike-Robins, as shot here last February. Next day we decided to attempt to double the North-West Cape, and accordingly proceeded slowly through the dense spinifex and rat holes. We camped close to the beach, near Vlaming Head, where a heavy surf breaks ceaselessly on the beach. Wild dogs' tracks were numerous, and we thoughtfully provided any comers with some supper. Just as I was dozing off my dog (tied under buggy) barked furiously. I looked up cautiously and saw a big dingo inspecting the camp from about 10 yards distance. I reached for the rifle, but he was off instantly. However, next morning he or another was dead close to the camp and several baits gone. As we approached Vlaming Head the going got a little better. Flocks of Pied Honey-eaters were constantly passing us, flying against the strong north-east wind, two or three Wedge-tailed Eagles were seen soaring over the range, and once a Black-checked Falcon whizzed past us. At Vlaming Head the high range ends

abruptly, though the land still trends on about three miles further in sand-hills and salt marshes. We carefully skirted the edge of the treacherous marsh, but in spite of all care the horses broke through the crust several times, but luckily did not get absolutely bogged. In the centre of the marsh were four reddish rounded objects, which suddenly stood up as big specimens of the great plain kangaroo. They looked immense on the bare flat plain, and were evidently having a siesta, with no cover for dogs or other enemies to approach. By noon we were at the Exmouth Gulf, and stopped for dinner. I may mention a "record" of another description was here made, as no wheeled conveyance of any kind had previously been round Vlaming Head. In the afternoon we had to proceed along the beach, as everywhere else seemed to be dense thicket. Fortunately the tide was low and the going hard. A large white patch ahead of us proved to be a flock of Bare-eyed Cockatoos taking a siesta on the bare beach. Towards sundown we judged we were opposite a watering place, and forced a way to it through the dense scrub. This is a place shown to me by a native 12 years ago, after promises of much tobacco, as he said no white man had ever seen it, and the natives did not wish them to know of it. The hole at surface is in solid rock (cement conglomerate), about 18 inches in diameter. This aperture opens out below into a large cavern, with a large, deep pool of splendid water at one end. The third time the bucket was lowered the rope slipped off the handle, and, as the native declared the cave full of snakes, it fell to my lot to descend and rescue the bucket. My stay below was not long enough to see if snakes were plentiful or not. They used to be there in previous years. Next day we left the buggy and rode about ten miles south towards where are a pool and spring of fresh water. On the way through the thicket many Singing (*Ptilotis sonora*) and Kearthland Honey-eaters were feeding on the yellow pendent blossoms of the cork trees (?). One bird among them seeming to differ by its bright yellow back, I shot it, but unfortunately failed to find it in the tangled undergrowth. A little further south an Osprey was uttering its plaintive whistling, aloft in the air. The nest was a conspicuous object high up in a gum tree, and about a mile from the beach, the greatest distance I have yet seen one. It also proved empty. Proceeding south we saw an immense nest in a low gum tree, which could only be an Eagle's. Deciding to visit it on returning, we went on to Quailing Pool to water. Two White-eyed Ducks rose hurriedly at our approach, and flew straight to sea out of sight, apparently none the worse for two barrels discharged at long range. Just as we were leaving after dinner an Emu came in to drink, the first one seen. Returning we looked at the Eagle's nest. A noble White-bellied Sea Eagle slipped quietly off the nest while we were still at some distance, and, taking a wide circuit, flew close over-

head silently. This looked promising, but on swinging myself to the nest it was without eggs, though apparently ready, being neatly lined with fresh gum leaves. It was a large structure, fully 6 feet in diameter and 4 feet in depth, and was only 10 feet from the ground. On previous instances I have noted both this bird and the Wedge-tailed Eagle sitting on empty nests. Crossing a stony creek, near where I lost the strange bird in the morning, my attention was called by a strange loud song, somewhat resembling that of the Red-capped Robin in its grating sound. I was lucky enough to secure the bird, and it was a Golden-backed Honey-eater (*Melithreptus laticor*)—so far, I believe, a farthest south and west record. The naked skin over the eye was gamboge-yellow in front, emerald green posteriorly, but this faded to a dull purple soon after death. The following day saw us again at the same spot, when another specimen was procured, a male, apparently breeding, as was the first. The yellow of the rump on both birds was almost as bright as on the nape of the neck. About six of these birds were seen, but they were very shy.

Next day we decided to spell the horses, and had a long walk through more open timbered country, with large spinifex growth. The native was sure we should find Emu nests there, but we saw no birds or tracks. Pallid Cuckoos (*C. pallidus*) were numerous, and Black-faced Cuckoo-Shrikes (*Graucalus melanops*) in some numbers. Returning a fine kangaroo fell to the rifle, to replenish the larder, which was getting low again. The afternoon we spent in exploring the dense thicket round the water. Another Osprey's nest was found, in the topmost twigs of a white gum. They were so thin and looked so brittle we decided the nest was, like the others, empty. It is the first Osprey's nest I have found that was not easy of access. The thicket yielded nothing new. A beautiful *Malurus assimilis* was secured, and Wedge-bills, Spiny-cheeked Honey-eaters, and Western Fantails noted. We paid another visit to the Eagle's nest the following day, but it still contained no eggs. On watering at the pool the native said he saw a Duck behind a mangrove bush. Thinking there might be more, I crawled cautiously up and could see a bird in the water through the leaves, but it looked very small. However, I fired, and picked up an unfortunate Black-throated Grebe.

Next day we packed up for our return journey. Apparently the same flock of Cockatoos was basking about the same spot on the beach again, and we found two Pied Oyster-catchers' nests (hollows in sand), close together, empty. The question arises, do these birds make several nests, as does the English Lapwing, whose antics are described by Mr. Selous in an article in *The Zoologist* for last April? Soon after we were on the west side of Vlaming Head three big dingoes came galloping straight for the buggy. I hastily got out with the rifle, but the

native said—"Wait a little, they will come close." This they did, getting within 80 yards, when, getting our scent, they turned and bounded off through the spinifex, apparently escaping the two bullets sent after them. However, we camped not far away, and left some kangaroo for them. Several wild cats (domestic variety) were seen about here, and no doubt they account for the destruction of many small birds. Next day a small bird fluttered out of a tuft of samphire close to the wheel. The native was sure it was a "brown one"—as I have taught him to distinguish the Desert-Bird from other small varieties. Getting out I found a nest built in a hollow in the ground, but it was domed, and the three eggs seemed to me to be those of the Field-Wren. However, there is nothing like being sure, so the buggy was sent on a little and I lay down. It was an hour before the bird showed itself on a low bush some 50 yards distant, but it carried its tail erect. A minute later it appeared at the nest, having crept unobserved through the surrounding vegetation. A charge of dust shot proved it to be a Field-Wren. The nest was thickly lined with feathers of the Desert-Bird, so they must be about there, though so far we had failed to see one.

We went on to the next water, dropping matches as we went to improve the road of spinifex for the next comer. When on the range in the afternoon the wind veered, and looking towards the camp we saw a furious fire apparently burning all the thicket where the buggy was left. We hurried back, and as things looked pretty bad, the fire burning fiercely within 100 yards of the camp, we harnessed up and went on to the mangroves. Nothing much of interest was found the following day. The supposed White-headed Eagle's nest was apparently in possession of two Crows. There was a small flock of Red-necked Avocets, and an extremely shy Wader, which was there before. All efforts to get within gunshot were futile. It flew away every time, uttering a cry of "pe-pe-pe," almost exactly like a Redshank. It possibly was a Greenshank. There was the flock of Teal in the same place, and, thinking a few ducks would be a treat after so much kangaroo diet, the native was sent round to drive them towards me concealed. After a long interval, in which the ducks came no nearer, I heard the native shouting, but, taking no notice, walked in opposite direction till I heard there was a note of emergency in his cries, so hurried round to his side, to find my dog in fits, having evidently picked up a bait. We gave it tobacco, and it recovered after two hours. In the meantime an Osprey was fishing close to us. Once we distinctly saw it emerge from the water, only about 20 yards from us, with a fish in each talon.

We concluded we had had enough of mangroves, and made our way south again in afternoon to the Yardie Creek, only once seeing a Desert-Bird. Our efforts to find its nest or flush

it a second time were unavailing. There is no mistaking the flight of this bird. It flutters along with rapid wing-strokes, the short, rounded wings being very evident, and the tail drooping and expanded. During the four days of our return strong east and north-east winds blew, and for the greater part of the day constant flocks of Pied Honey-eaters, Black Honey-eaters (*Myzomela nigra*), Tri-coloured Chats (*Ephthianura tricolor*), Grey-breasted and Masked Wood-Swallows (*Artamus cinereus* and *A. personatus*), and another small bird, whose species I could not determine, were flying against the wind. The Pied Honey-eaters were in flocks at times of fifty or more. The Chats were all female or immature birds, no full-plumaged ones being seen. Two Orange-fronted Chats were noticed. In *The Emu* for April last Mr. Hall (or Mr. Rogers) remarks it singular that the Black Honey-eater has not been recorded for North-Western Australia. It is mentioned in *The Zoologist* for March, 1899. Arrived at the Yardie we made one more attempt for a nest of *Eremiornis*. Ascending a high part of the range, we systematically beat down a gully filled with huge bunches of "buck" spinifex—most unpleasant "wading." This spot had often held these birds before, and as we neared the end of it one of them darted out before the native. I thought my snap-shot missed it, but we found it lying dead, in perfect plumage, the first I have seen with upper and under tail coverts complete. A long search for the nest found nothing, and indeed a nest would be difficult to discover in such growth. On skinning the bird it proved to be a male, apparently near breeding. It had the usual remains of black beetles and small grasshoppers in its gizzard. A White-fronted Honey-eater (*Glycyphila albifrons*) was secured after much trouble on returning to camp. They are excessively shy birds. We should have liked to search on the table-land country lying behind the ranges here, where Striated Grass-Wrens (*Amytis*), Rufous-crowned Emu Wrens (*Stipiturus ruficeps*), and Desert-Birds have been noted, but my boots were worn out on the sharp rocks, and our flour, sugar, and tobacco almost exhausted; so we returned to the station, feeling somewhat disappointed in the matter of eggs, but well satisfied with adding two new species to the list of birds for the locality.

WOOD DUCKS BREEDING IN CAPTIVITY.—A pair of Wood Ducks or Maned Geese (*Chenonetta jubata*), which have been in the possession of Mr. Alex. Dennis, of "Eeyeuk," Kolora (Vic.) for 14 years, bred last season for the first time, rearing two young (females). Wood Ducks rarely breed in captivity. There is only one instance recorded at the Zoological Gardens, Melbourne, where the Duck laid in an old cement barrel.

Description of a New *Micrœca* from Northern Australia.

BY A. J. CAMPBELL.

MR. D. Le Souëf, C.M.Z.S., has been good enough to hand me for description a *Micræca* from the Northern Territory, forwarded by one of his collectors, which appears to be new, differing from the other familiar brown and white species by its entirely brownish tail and by its much stouter bill. On account of the former characteristic I would suggest the name *M. brunneicauda*, and in the vernacular Brown-tailed Flycatcher.

Description.—Whole of the upper surface olive-brown; under surface (including under tail coverts) white, slightly buffy about the throat and breast. There are some light-coloured facial markings, but the skin (which is also unsexed) is too much damaged to define them. Bill, feet, and eyes dark. Dimensions in inches:—Total length, 4.5 inches; bill, .41; wing, 2.8; tail, 2.2; tarsus, .7.

A nest and egg (the latter being distinguished from those of the other known members of the genus by its lighter colouring) will be described by Mr. Le Souëf, together with other northern eggs, in this issue.

Descriptions of Birds' eggs from the Port Darwin District, Northern Australia.

BY D. LE SOUËF, C.M.Z.S., &c.

PART I.

THE eggs which form the subject of this paper have been collected for me by three different collectors, and skins of the parent birds sent to identify them by. Most have been described before, but chiefly from more southern districts, and it is interesting to compare the measurements with those of the same birds that breed in Southern Australia, for, as is well known, the further north certain birds range the smaller are their eggs.

ASTUR NOVÆ-HOLLANDIÆ, sub-species LEUCOSOMUS (Lesser White Hawk).

Cat. B. Brit. Mus., vol. i., p. 119.

The nest of this bird was found on 15th May, and it contained one fresh egg, the full clutch evidently not having been laid; it is without gloss and the inside lining green; the colour is bluish-white and sparingly marked over, except on the apex, where markings are plentiful, with rather small brown irregular spots, those under the surface being pale grey. The egg measures 1.84 x 1.40 inches.

NINOX BOOBOOK, sub-species OCELLATA (Marbled Owl).

Cat. B. Brit. Mus., vol. ii., p. 170.

The nest of this Owl was found on 25th May, in a dead hollow spout of a eucalyptus tree, and the two eggs laid in the decayed wood at the bottom; they are dull white in colour, shell somewhat coarse and slightly pitted. They measure—(1) 1.66 x 1.26, (2) 1.60 x 1.25 inches. I do not think these eggs have been described before.

STRIX NOVÆ-HOLLANDIÆ (Masked Owl).

Cat. B. Brit. Mus., vol. ii., p. 303.

A single egg of this bird was found on 20th June in a deep hollow in a eucalyptus tree, laid on the decayed wood at the lower end; it is dull white, finely pitted, and measures 1.79 x 1.40 inches. I think that this bird's egg is now described for the first time. Another example measures 1.96 x 1.58 inches.

STRIX FLAMMEA, sub-species DELICATULA (Lesser Masked Owl).

Cat. B. Brit. Mus., vol. ii., p. 297.

Three nests of these beautiful birds were found on 1st, 2nd, and 18th May; one had two eggs in and the others one each, and were situated in hollows in eucalyptus trees growing on the river bank; they are white, slightly glossy, finely pitted, and measure—A, 1.69 x 1.26; B, 1.78 x 1.29; C, (1) 1.58 x 1.16, (2) 1.56 x 1.16 inches.

CORVUS CORONOIDES (Crow).

Cat. B. Brit. Mus., vol. iii., p. 20.

It is not difficult as a rule to separate Crows' eggs from those of the Raven (*Corone australis*), on account of their lighter colour, especially in the extreme north, although, so far, I have received no eggs or skins of Ravens from Northern Australia. The bulky stick nests of these birds are usually lined with fine rootlets, grass, or fine shreds of bark. The same nest is generally used year after year, and as a rule built high up and difficult of access. The ground colour of the eggs is very pale green, speckled with markings of greenish-brown, frequently more numerous on the larger end, but occasionally on the smaller. The markings are much lighter on some eggs than others, and in one clutch the eggs have only a very few pale greenish-brown spots on. They are glossy, and different clutches vary considerably in size. They measure—A, 1.84 x 1.21; B, (1) 1.58 x 1.16, (2) 1.55 x 1.9, (3) 1.62 x 1.16, (4) 1.64 x 1.18, (5) 1.54 x 1.16, (6) 1.42 x 1.14; C, 1.57 x 1.16; D, 1.57 x 1.14; E, 1.62 x 1.15 inches. The dates on which they were found were 11th December, 1st May, 8th, 15th, and 17th June.

STRUTHIDEA CINEREA (Grey Jumper).

Cat. B. Brit. Mus., vol. iii., p. 140.

These interesting "family" birds, which, like the *Corcorax melanorhamphus*, construct a mud nest which is common to the

community, have a wide range, but the eggs of those in Northern Australia are smaller than those in the south. They are curiously marked with a few longitudinal spots of either brown or purple on the apex of the larger end of the egg only; the markings often look as if they had been painted on the bluish-white surface. They are slightly glossy, and measure—A, 1.14 x .71; B, (1) 1.2 x .68, (2) 1.7 x .67, (3) 1.9 x .67 inches. The dates, 16th November and 3rd December.

ORIOLOUS AFFINIS (Northern Oriole).

Cat. B. Brit. Mus., vol. iii., p. 188.

One nest of this bird was found on 17th November, and it contained a full clutch of three eggs, the open nest being suspended from a fork near the end of a branch and made of coarse grass. The eggs are cream colour, with blotches of purplish-brown, especially on the apex of the larger end, and purple markings under the surface. They are slightly glossy, and measure—(1) 1.30 x .84; (2) 1.28 x .88; (3) 1.27 x .88 inches.

ORIOLOUS FLAVICINCTUS (Yellow Oriole).

Cat. B. Brit. Mus., vol. iii., p. 206.

These birds also build a hanging, open nest of grass, fastened to a fork near the end of a branch, and they are plentiful in certain districts in Northern Australia. The ground colour of the eggs is light cream, in some cases almost white; the slightly glossy surface is marked with dark brown spots, in many cases almost black, and they are mostly plentiful at the larger end, occasionally forming an irregular zone; beneath the surface appear purple markings. The eggs of these birds are easily distinguishable from those of the Northern Oriole, as they are not blotched like the former, but spotted. The clutch consists of two only. The following are the dates on which some were found:—16th, 20th, 30th November; 1st, 6th, 7th (2), 8th, 12th, 13th, 18th, 24th December; and 3rd January. Six clutches measure—A, (1) 1.44 x .96, (2) 1.38 x .92; B, (1) 1.38 x .90, (2) 1.41 x .95; C, (1) 1.30 x .90 (2) 1.20 x .86; D, (1) 1.35 x .86, (2) 1.25 x .88; E, (1) 1.22 x .91, (2) 1.25 x .93 inches.

SPHECOTHERES FLAVIVENTRIS (Yellow-bellied Fig-Bird).

Cat. B. Brit. Mus., vol. iii., p. 225.

The open, shallow nests of these noisy birds are built of dark-coloured tendrils, through which the eggs can be seen from below, and are generally situated towards the end of a branch of some tall eucalyptus tree, and difficult to get at. The clutch is usually two, and the eggs are of an olive-green colour, with brown markings, which are usually most plentiful on the larger end, sometimes forming an irregular zone; occasionally an egg is speckled all over. The dates on which four clutches were

found are—8th, 9th, 30th December and 10th January; and the eggs measure—A, (1) 1.30 x .86, (2) 1.28 x .87; B, (1) 1.25 x .90, (2) 1.27 x .88; C, (1) 1.24 x .83, (2) 1.22 x .80; D, 1.26 x .84 inches.

CHIBIA BRACTEATA (Drongo).

Cat. B. Brit. Mus., vol. iii., p. 236.

These birds build an open nest of light-coloured rootlets, with lining of finer material. They lay from three to four eggs, which are of a pinkish white, with fine brown markings of various shades. Some are thickly freckled; others, again, have comparatively few markings. The spots under the surface are lilac. The dates on which four clutches were found are—28th November; 1st, 9th, and 10th December. The eggs measure—A, (1) 1.18 x .84, (2) 1.21 x .80; B, (1) 1.15 x .80, (2) 1.16 x .84, (3) 1.11 x .80; C, (1) 1.3 x .78, (2) 1.11 x .81, (3) 1.04 x .70; D, (1) 1.13 x .80, (2) 1.14 x .80, (3) 1.10 x .78 inches.

GRALLINA PICATA (Magpie Lark).

Cat. B. Brit. Mus., vol. iii., p. 272.

These graceful birds are very plentiful in Northern Australia in suitable localities. The eggs vary much in colour, from a creamy white to pink; the markings also vary from brown to reddish-brown. They are more plentiful on the larger end, the spots below the surface being dark purple. The birds lay in October, November, and December, and the eggs measure—A, (1) 1.14 x .84, (2) 1.10 x .81, (3) 1.10 x .84, (4) 1.15 x .84; B, (1) 1.02 x .78, (2) 1.04 x .80, (3) 1.04 x .78, (4) 1.08 x .86, (5) 1.05 x .78 inches.

COLLYRIOCINCLA BRUNNEA (Brown Shrike-Thrush).

Cat. B. Brit. Mus., vol. iii., p. 291.

The Brown Shrike-Thrush is found more or less in all the northern parts of Australia. It builds an open nest, composed generally of fibres of bark or rootlets, and lined with fine tendrils or grass. The eggs are white, and some have bold markings of dark brown scattered over the surface, with lilac markings beneath; others again are more finely freckled, with light brown spots and light grey markings beneath the surface. There are gradations between. Two nests were found, on 18th October and 2nd December. The eggs measure—A, (1) 1.18 x .73, (2) 1.20 x .74, (3) 1.20 x .74; B, (1) 1.02 x .78, (2) 1.03 x .77, (3) 1.04 x .76 inches. The eggs of the first clutch are abnormally long.

PINAROLESTES PARVULUS (Little Shrike-Thrush).

Cat. B. Brit. Mus., vol. iii., p. 296.

These birds are very plentiful in the Port Darwin district, being found mostly in the scrubby country. Their nests are strongly built, frequently of strips of melaleuca bark, but occasionally of coarse grass, the lining being generally small

rootlets. The eggs are a pale, pinkish-buff, with little variation, and plentifully marked with purplish-brown spots, especially on the larger end, and are easily distinguishable from those of the other *Collyriocinclæ*. All the clutches were found in January and February. The eggs measure—A, (1) 1.4 x .76, (2) 1.3 x .75; B, (1) .95 x .71, (2) .96 x .72; C, (1) 1.1 x .74, (2) 1.1 x .71 inches.

MICRÆCA BRUNNEICAUDA (Brown-tailed Flycatcher).

The nest and egg of this new Flycatcher were found on 19th December, situated on the fork of a horizontal branch. The nest is composed of fine shreds of bark of the melaleuca tree, intermixed with grass, and is lined with fine grass, and covered externally with cobweb. Its interior measurements are— $\frac{3}{4}$ -inch in depth; breadth, $1\frac{3}{4}$ inches; exterior—depth, $1\frac{1}{4}$ inches; breadth, $2\frac{1}{4}$ inches. It is very similar to those of the other *Micræcæ*. The egg has a very pale creamy-white ground colour, well marked with small cloudy spots of light purplish-buff, and measures .63 x .49 inch. The nest and eggs have not been previously described, nor has the bird, which I have asked Mr. Campbell to describe in another part of this number.

SISURA NANA (Little Flycatcher).

Cat. B. Brit. Mus., vol. iv., p. 408.

Two nests of this delicate little bird were found, each with one fresh egg in, but the full clutch is probably three. They were composed of shreds of melaleuca bark, intermixed with grass, and lined with fine grass-stalks and dark-coloured tendrils, and were situated in the upright fork on a branch of a dead shrub. They measure—interior, depth $1\frac{1}{2}$ inches, breadth $1\frac{3}{4}$ inches; exterior, depth $2\frac{1}{2}$ inches, breadth $2\frac{1}{2}$ inches. The eggs measure—A, .70 x .52; B, .64 x .50 inch, and the ground colour of one is white and the other a pale cream. They each have a zone round the larger end, composed of light reddish-brown confluent markings, and very few on the rest of the egg. The markings beneath the surface are light purple. The nests were found on 9th and 15th January.

PŒCILODRYAS CERVINIVENTRIS (Buff-sided Robin).

Cat. B. Brit. Mus., vol. iv., p. 242.

This interesting Robin enjoys a northern habitat, and three of its nests were discovered with fresh eggs in. Two of the nests had one in and the other two, the dates being 30th December, 18th and 19th January. They are composed chiefly of curled vine tendrils or shreds of bark, lined with finer tendrils or rootlets, a little cobweb being placed on the outside. They measure—interior, depth $1\frac{1}{2}$ inches, breadth 2 inches; exterior, depth 2 inches, breadth 3 inches. The eggs are pale green with reddish-brown markings, in one case chiefly

on the larger end, and in another principally on the smaller; one egg has cloudy purplish-buff markings; those beneath the surface are lilac. They measure—A, (1) .74 x .55, (2) .73 x .55; B, .72 x .55; C, .70 x .54 inch.

CHLAMYDERA NUCHALIS (Great Bower-Bird).

Cat. B. Brit. Mus., vol. vi., p. 391.

Four nests of these birds were discovered, containing one egg each, although two are occasionally found. The dates are 9th and 17th October and 3rd and 19th November. The ground colour of the eggs is pale cream, with hair-like brown and reddish-brown markings, which appear as if they have been wound round and round in a very irregular fashion; many of the lines seem to go all ways. The egg is glossy, and measures 1.84 x 1.14 inches.

POMATORHINUS RUBECULUS (Red-breasted Babbler).

Cat. B. Brit. Mus., vol. vii., p. 421.

Nests and eggs of this bird were found on 29th September, 21st October, and 21st January. The nests were the usual large, domed, stick structures, and contained from two to three eggs, the colour being greyish-brown with reddish-brown lines, often crossing one another. One clutch measures—(1) 1.01 x .73; (2) 1.02 x .72 inches.

CRATICUS NIGRIGULARIS, sub-species PICATUS (Pied Butcher-Bird).

Cat. B. Brit. Mus., vol. viii., p. 96.

These birds generally go in pairs and build their open stick nests in eucalyptus trees in open forest country. Their eggs are a light greyish-green colour, with brown markings, mostly on the larger end, and measure—(1) 1.23 x .85; (2) 1.26 x .87; (3) 1.25 x .88 inches.

PACHYCEPHALA SIMPLEX (Brown Thickhead).

Cat. B. Brit. Mus., vol. viii., p. 219.

Two nests of this bird were found, one on 23rd January and the other on 6th February, and one contained two eggs, the other one. The nest is an open structure composed of long pieces of coarse grass, lined with the feathery seed-top of some kind of grass and a few white feathers. It measures—internal depth, 2 inches, breadth 2 inches; external depth, 2¼ inches, breadth 4 inches. It was situated in a partially horizontal fork of a dense bush. The eggs are pale buff, with spots of dark brown, rather more numerous on the larger end. The markings under the surface, which are also numerous, are lilac. The measurements are—A, (1) .92 x .62, (2) .88 x .60; B, .85 x .62 inches. These eggs have not been previously described.

CLIMACTERIS MELANURA (Black Tree-Creeper).

Cat. B. Brit. Mus., vol. viii., p. 334.

The nest of this bird was a considerable distance down a hollow spout in a eucalyptus tree, and contained three eggs, which are round in form, the ground colour light pink, thickly speckled all over with reddish-brown spots, which are more numerous on the larger end and are there confluent. They measure—(1) .86 x .74; (2) .84 x .72; (3) .87 x .76 inches. Date, 19th September.

SITTELLA STRIATA (Striated Tree-Runner).

Cat. B. Brit. Mus., vol. viii., p. 364.

These interesting little birds are only found in Northern Australia, and one of their nests was discovered on 17th September. It was the usual beautiful structure, similar to the other Sittellas', being mostly made of cobwebs and covered on the outside with small longitudinal pieces of bark, and built in the upright fork of a eucalyptus tree. The eggs are white, and boldly marked all over, especially at the larger end, with dark slate-coloured cloudy spots. They measure—(1) .68 x .51; (2) .66 x .51; (3) .67 x .50 inches.

MYZOMELA PECTORALIS (Banded Honey-eater.)

Cat. B. Brit. Mus., vol. ix., p. 138.

These lively little birds prefer the open forest country, especially where the timber is stunted. One of their open suspended nests was found on 24th November, and contained two eggs. These are of a pale reddish colour, with markings of a slightly darker hue, most plentiful on the larger end, where they generally form a zone. The eggs measure—(1) .65 x .47; (2) .66 x .48 inch.

MELITHREPTUS LUNULATUS, sub-species ALBIGULARIS (White-throated Honey-eater).

Cat. B. Brit. Mus., vol. ix., p. 205.

The suspended nest of this Honey-eater was found on 26th October, and contained two eggs of a pale reddish colour, with light reddish-brown markings, especially round the larger end, where they are confluent. The eggs measure—(1) .71 x .53; (2) .72 x .54 inch.

ENTOMOPHILA RUFIGULARIS (Red-throated Honey-eater).

Cat. B. Brit. Mus., vol. ix., p. 219.

These little birds are very plentiful, and many of their suspended nests were found, the dates being from December to February. The eggs vary very little in markings or colour, being white, thickly speckled all over, especially on the larger end, with reddish-brown dots, the full clutch being three. They

measure—A, (1) .68 x .48, (2) .69 x .46, (3) .70 x .47; B, (1) .70 x .49, (2) .69 x .48, (3) .66 x .47 inch.

PTILOTTIS UNICOLOR (White-gaped Honey-cater).

Cat. B. Brit. Mus., vol. ix., p. 249.

Three nests of this bird were found, on 17th September, 19th December, and 12th January respectively. They were composed of frayed-out grass, portions of spiders' nests, and fine rootlets, were lined with fine grass, and measured—internal depth, $1\frac{1}{2}$ inches; breadth, $2\frac{1}{2}$ inches. The eggs are white, with a few light reddish-brown markings, especially on the larger end, where they form an irregular zone. They measure—A, (1) .90 x .64, (2) .93 x .73; B, .88 x .69; C, (1) .89 x .59, (2) .90 x .60 inch.

ENTOMYZA ALBIPENNIS (White-quilled Honey-cater).

Cat. B. Brit. Mus., vol. ix., p. 269.

These birds, as a rule, build their grass nests inside that of a *Pomatorhinus*. Their eggs are a light salmon-pink, but occasionally some are almost white, probably a second clutch. They have a few rich dark brown markings, mostly on the larger end and well on the apex. They vary in size, some being elongated and others nearly round. Three clutches measure—A, (1) 1.04 x .80, (2) .96 x .82, (3) 1 x .81; B, (1) 1.08 x .84, (2) 1.10 x .82; C, (1) 1.23 x .82, (2) 1.16 x .80 inches. The dates are—17th, 28th October, and 5th November.

PARDALOTUS MELANOCEPHALUS (Black-headed Pardalote).

Cat. B. Brit. Mus., vol. x., p. 60.

A nest at the end of a burrow belonging to these birds was found on 17th September. The eggs are, as usual, white and rounded, and measure:—(1) .68 x .54, (2) .68 x .51, (3) .72 x .55, (4) .70 x .51 inch.

MIRAFRA SECUNDA (Lesser Bush-Lark).

Cat. B. Brit. Mus., vol. xiii., p. 603.

Three nests of these birds were found, on 1st, 11th, and 23rd January, each with two eggs in. The nest is an open structure, built of shreds of bark and grass, and was placed on the ground beside a tussock of grass, which partly concealed it. It measures—internal depth 1 inch, breadth 2 inches; external depth $1\frac{1}{2}$ inches, breadth $3\frac{1}{2}$ inches. The eggs are glossy, and greenish white in colour, thickly marked all over, especially on the larger end, with dark olive-green markings. The freckles are more numerous on some eggs than on others. They measure—A, (1) .76 x .56, (2) .73 x .58; B, (1) .68 x .54, (2) .72 x .55; C, (1) .70 x .54, (2) .71 x .53 inch.

PITTA IRIS (Rainbow Pitta).

Cat. B. Brit. Mus., vol. xiv., p. 444.

These beautiful Pittas are plentiful in this district in the

scrub, and build their loose nests of grass and fibres on the ground, generally alongside a log or stone. Their eggs are easily distinguishable from those of other Pittas, being white, with a few very dark brown and almost black markings, mostly on the larger end; some have many more markings than others. The spots beneath the surface are lilac. Four is a full clutch. They are glossy, and measure—A, (1) 1.01 x .85, (2) 1.03 x .84, (3) 1 x .83, (4) 1 x .85; B, (1) 1 x .80, (2) 1.01 x .81, (3) 1.03 x .81, (4) 1.06 x .78 inch. The dates are from December to February.

EUROSTOPUS GUTTATUS (Spotted Nightjar).

Cat. B. Brit. Mus., vol. xvi., p. 608.

Only two eggs of this bird were found, laid, as usual, on the bare ground on a stony ridge, on the 17th and 21st October. They are a delicate green with a few dark markings on, and measure—A, 1.31 x .93; B, 1.29 x .91 inches.

ALCYONE AZUREA, sub-species PULCHRA (Purple Kingfisher).

Cat. B. Brit. Mus., vol. xvii., p. 169.

On 13th and 23rd April two nests were found in a burrow in the bank of a stream, with five eggs in each nest. They are a beautiful glossy white, rounded in form, and measure—(1) .76 x .68; (2) .80 x .72; (3) .81 x .71; (4) .81 x .72; (5) .82 x .68 inch. The measurements of the second clutch are almost identical.

TRICHOGLOSSUS RUBRITORQUES (Red-collared Lorikeet).

Cat. B. Brit. Mus., vol. xx., p. 60.

Several nests of these birds were found in hollow spouts in eucalyptus trees, the eggs being laid on the decomposed wood, and they soon get stained. They are rounded and pure white, with no gloss, and measure—A, (1) 1.01 x .85, (2) 1.02 x .84; B, (1) 1.05 x .86, (2) 1.02 x .83; C, (1) 1.03 x .85, (2) 1.01 x .84 inches. The dates on which they were found are 22nd December, 6th January, and 6th April.

CACATUA GALERITA (White Cockatoo).

Cat. B. Brit. Mus., vol. xx., p. 116.

Three nests of these birds were found, on 2nd and 22nd May and 2nd July, and each contained one egg. They are pure white, elongated in form, and measure—A, 1.92 x 1.27; B, 1.82 x 1.30; C, 1.70 x 1.22 inches.

PLATYCERCUS BROWNI (Smutty Parrakeet).

Cat. B. Brit. Mus., vol. xx., p. 549.

A nest of this bird was found on 1st July with one fresh egg in, the full clutch probably not having been laid. The egg was deposited on the decomposed wood at the bottom of a hollow in a branch of a eucalyptus tree. It is white, slightly glossy, somewhat rounded in shape, and measures .99 x .82 inch.

PSEPHOTUS CHRYSOPTERYGIUS (Golden-shouldered Parrakeet).

Cat. B. Brit. Mus., vol. xx., p. 565.

This beautiful bird is only found in Northern Australia, and its nest was discovered on 16th December, the egg being laid at the end of a hollow dead branch of a eucalyptus tree on the earthy substance. There was only one fresh egg, the rest apparently not having been laid. It is pure white, glossy, and rounded, and measures .86 x .72 inches.

GEOPHAPS SMITHI (Naked-eyed Partridge-Pigeon).

Cat. B. Brit. Mus., vol. xxi., p. 532.

The habits of this Pigeon are very similar to those of *G. scripta*. Its two very pale cream-coloured eggs are laid on the ground in a slight nest made of grass, or sometimes on a tussock of grass. The dates on which three nests were found are 10th December, 2nd and 3rd July. The eggs are somewhat oval, slightly glossy, and measure—A, (1) 1.13 x .84, (2) 1.12 x .81; B, (1) 1.08 x .80, (2) 1.12 x .80; C, 1.08 x .83 inches.

TURNIX CASTANONOTA (Chestnut-backed Quail).

Cat. B. Brit. Mus., vol. xxii., p. 552.

These birds make their nests on the ground, either close alongside a tussock of grass or where the grass grows long, especially in the neighbourhood of water. The full clutch seems to be four. The eggs are rounded, glossy, and finely pitted, and when rubbed together produce a sound like china marbles, in common with most other Quails' eggs; they are greenish white, and some are boldly speckled with very dark brown or almost black markings, especially on the larger end, while others have much smaller faint spots of purplish-brown. The markings beneath the surface appear grey. The eggs vary somewhat in size, and measure (see illustration)—A, (1) 1.09 x .82, (2) 1.10 x .81, (3) 1.10 x .80, (4) 1.08 x .79; B, (1) 1.02 x .79, (2) 1.03 x .79, (3) 1 x .78, (4) .93 x .79; C, (1) .94 x .75, (2) .98 x .80, (3) .93 x .78, (4) .96 x .75 inches. Dates—3rd, 4th, 13th, and 30th January.

TURNIX PYRRHOTHORAX (Red-chested Quail).

Cat. B. Brit. Mus., vol. xxii., p. 553.

A nest of this Quail was found on 26th September, made close to a tussock of grass, which completely screened it from observation. The eggs are rounded, and, as usual in Quails' eggs, much pointed at one end. They are a creamy white, and thickly freckled with rather fine markings of reddish brown, especially on the larger end, where they are confluent. They measure—(1) .90 x .75; (2) .94 x .71 inch.

AMAUORNIS MOLUCCANA (Rufous-tailed Rail).

Cat. B. Brit. Mus., vol. xxiii., p. 153.

The nest of this bird, containing three eggs, was found on



Eggs of Chestnut-backed Quail (*Turnix castanonota*).

FROM A PHOTO. BY D. LE SOUEF.

20th April, and was composed of coarse grass and other herbage, and measured in breadth $3\frac{1}{2}$ inches. The eggs are buffy-white, slightly glossy, and have dark brown markings, especially at the larger end, those beneath the surface being lilac. They measure—(1) 1.40×1.07 ; (2) 1.32×1.06 ; (3) 1.35×1.01 inches.

PLATALEA REGIA (Black-billed Spoonbill).

Cat. B. Brit. Mus., vol. xxvi., p. 47.

These birds are fairly plentiful in Northern Australia. They nest in the swamps, frequently in company with Ibises, and make their nests on broken-down reeds and shrubs. The eggs soon get nest-stained, and are chalky-white, with a few brown markings, generally most numerous on the larger end. They are elongated in shape, and not so rounded as *P. flavipes*. They measure—(1) 2.68×1.60 ; (2) 2.55×1.70 ; (3) 2.55×1.59 ; (4) 2.54×1.74 inches.

XENORHYNCHUS ASIATICUS (Black-necked Stork, or Jabiru).

Cat. B. Brit. Mus., vol. xxvi., p. 310.

These birds build very large stick nests on trees growing in or near a swamp. They lay three or four finely pitted white eggs. The dates on which four nests and eggs were found are 9th and 11th May, 2nd and 11th June. The eggs measure—A, (1) 2.86×2.06 , (2) 2.92×2.10 ; B, (1) 2.98×2.05 , (2) 2.72×2.07 inches.

NETTOPUS PULCHELLUS (Green Goose-Teal.)

Cat. B. Brit. Mus., vol. xxvii., p. 67.

A nest of these beautiful little Geese was found on 10th February, and contained nine light cream-coloured eggs, which are smooth and glossy, and oval in shape. They measure—(1) 1.70×1.38 ; (2) 1.67×1.35 ; (3) 1.64×1.36 ; (4) 1.66×1.36 ; (5) 1.67×1.36 ; (6) 1.62×1.35 ; (7) 1.60×1.39 ; (8) 1.63×1.38 ; (9) 1.62×1.40 inches.

DENDROCYNA ARCUATA (Whistling-Duck.)

Cat. B. Brit. Mus., vol. xxvii., p. 153.

Three nests of this bird were found on 1st and 7th February and 1st May. They contained 9, 6, and 3 eggs, which are glossy and smooth, and of a creamy-white, and, although fresh, were much nest-stained. They measure—(1) 2.01×1.54 ; (2) 2.02×1.53 ; (3) 2.04×1.57 ; (4) 2.05×1.54 ; (5) 2.03×1.56 ; (6) 2.06×1.53 ; (7) 2.04×1.55 ; (8) 2.05×1.54 ; (9) 2.01×1.53 inches.

DENDROCYNA EYTONI (Plumed Whistling-Duck).

Cat. B. Brit. Mus., vol. xxvii., p. 165.

The colour of the eggs of this Duck is white, and they are very similar to those of the preceding species, being smooth and slightly glossy. Three clutches of eggs were found, on 24th and

25th April and 9th March, and contained 10, 8, and 6 eggs. The clutch of 10 measure—(1) 1.85 x 1.52; (2) 2.1 x 1.54; (3) 1.88 x 1.46; (4) 1.89 x 1.50; (5) 1.90 x 1.52; (6) 1.93 x 1.51; (7) 1.92 x 1.54; (8) 1.94 x 1.52; (9) 1.91 x 1.50; (10) 1.91 x 1.50 inches.

TADORNA RADJAH (White-headed Shieldrake).

Cat. B. Brit. Mus., vol. xxvii., p. 175.

The eggs of this splendid Duck are very light in colour, being of a very pale cream. They are smooth and slightly glossy. The birds usually lay in a hollow in a tree, but not invariably. The dates on which some clutches were found are 2nd February, 4th, 6th, and 24th April, 1st and 21st May; and the number of eggs varies from 4 to 11. Two small clutches measure—A, (1) 2.28 x 1.64, (2) 2.34 x 1.55, (3) 2.34 x 1.61, (4) 2.41 x 1.64, (5) 2.32 x 1.62, (6) 2.37 x 1.64; B, (1) 2.31 x 1.68, (2) 2.28 x 1.65, (3) 2.29 x 1.68, (4) 2.31 x 1.66 inches.

Tasmanian Birds at Home.

By J. R. M'CLYMONT, M.A., BROWN'S RIVER ROAD, NEAR
HOBART.

THE birds which first attract one's notice in approaching Cascades (Tasman's Peninsula) are the Gannets (*Sula serrator*) and White-breasted Cormorants (*Phalacrocorax gouldi*). The Gannets keep to the deep water; the Cormorants often approach close to the shore, and are to be seen at rest on the old jetties in great numbers. In the winter season flocks of Duck (*Anas superciliosa*) and Teal (*Nettion castaneum*) frequent the shallow water of two or three fathoms in depth: and, lastly, the shore-line and the mud-flats adjoining it are resorted to by White-fronted Herons (*Notophox novæ-hollandiæ*) and Silver Gulls (*Larus novæ-hollandiæ*). Both Herons and Gulls seek their food in the neighbouring paddocks occasionally, but the Gulls and Lesser White-backed Magpies (*Gymnorhina hyperleuca*) do not agree well, and the former have to yield pride of place to the Magpie. Small crabs form a portion of the food of the White-fronted Heron; countless numbers of these crustacea, with blue carapaces and yellow extremities, perambulate the sandbanks left bare at low tide, and create a swishing sound with their multitudinous movements. In addition to the Anatidæ above mentioned, the Shoveller (*Spatula rhynchotis*) has been shot (1/6/93) in the vicinity.

When we arrive at the road which leads from Koonya to Impression Bay, we have on our left a rocky ridge terminating at a clump of blue gums which marks the site of an old burial ground, a locality much resorted to by the two Tasmanian

Melithrepti (*M. validirostris* and *M. melanocephalus*), and on the other side of the road a disused paddock, now overgrown with leptospermum and prickly wattle, wherein the Ground-Bird (*Cinclosoma punctatum*) dwells, and round the outskirts of which the Striated Field-Wren (*Calamanthus fuliginosus*) flits from bush to bush. The New Holland (*Meliornis novæ-hollandiæ*) and the Crescent or Tasmanian Honey-eaters (*M. australasiana*) frequent the banksias at the north-east corner of the paddock, and the Spine-billed Honey-eater (*Acanthorhynchus tenuirostris*) assiduously visits the flowerets of *Epacris impressa*, which grows everywhere around. The two last-named Honey-eaters are as much at home in the flower gardens of the residents as in the open bush. There are no Noisy Miners (*Manorhina garrula*) in this thickly-wooded district. Their absence might have been anticipated, but the same cannot be said of the absence (unless it has appeared recently) of the Fulvous-fronted Honey-eater (*Glycyphila fulvifrons*), which is known on the right bank of the Derwent, a few miles south of Hobart. The remaining Meliphagidæ of the Peninsula are the Yellow-throated Honey-eater (*Ptilotis flavigularis*), the Yellow Wattle-Bird, and the Brush Wattle-Bird (*Acanthochæra inauris* and *A. mellivora*), and the White-eye (*Zosterops cerulescens*).

On the 19th and 20th days of June two companies of Crescent Honey-eaters, consisting of about twelve birds in each, passed along this road about four miles from Hobart. There had been strong north-west gales, and a heavy fall of snow on Mt. Wellington, and I think the cold must have induced the birds, which are not usually gregarious, to leave the higher ground in order to seek warmth and food. They uttered continuously a low, plaintive note, very different from the harsh discords which constitute their only song. Amongst them were birds with an oblong black mark on each side of the throat—the vestiges, as it were, of a pectoral collar; whilst in others, the adult males, the collar was interrupted by the white of the throat, which extended down the breast, thus forming the two crescents from which the bird has received one of its vernacular names.

The order in which Passerine, Picarian, and Psittaceous birds of migratory or nomadic habits arrive on the Peninsula is as follows, so far as I have observed:—The Welcome Swallow (*Hirundo neoxena*) is the first to arrive (23/9/91), and is followed by the Swift Lorikeet (*Nanodes discolor*), 1/10/92, and the Pallid Cuckoo (*Cuculus pallidus*), 2/10/91. The Blue-banded Grass-Parrakeet (*Neophema venusta*) was observed once (5/10/91); this may have been an accidental visit. The Wood-Swallow (*Artamus sordidus*), 23/11/90, and the Shining Flycatcher (*Myiagra nitida*), 27/11/92, arrive later than the abovenamed birds. The Bronze Cuckoo (*Chalcococcyx plagosus*) was observed once (December, 1889); this also may have been an accidental visit. Cuckoo-Shrikes (*Graucalus parvirostris*) are sometimes

seen before spring commences. In 1890 I observed one on the 17th of August.

Let us resume our ramble. To the level tract a sandy ridge succeeds, covered with stringybark and native cherry trees (*Exocarpus cupressiformis*), and with a thick undergrowth of bracken ferns. Here I have surprised in mid-afternoon the little Spotted Owl (*Ninox maculata*) ensconced in the foliage of a stringybark sapling. The tarsi of this Owl are closely covered with pale rufous feathers to the base of the toes; the claws are well curved and pointed; the iris a waxy yellow, the beak lead-coloured, with the basal lighter in hue than the distal portion. Total length, $12\frac{1}{4}$ inches; wing, 8 inches; tail, $5\frac{1}{4}$ inches; tarsus, $1\frac{1}{2}$ inches. Mice are said to constitute its principal food, and to obtain these it does not require to leave its haunts in the bush, for there are bush mice in abundance, which dwell in rocky crannies or beneath tussocks of rank grass, from which they sally forth in quest of food in the daytime, as well as by night—quaint little creatures, cautious rather than timorous in the presence of man. The brow of the ridge is frequented by large companies of Hill Crow-Shrikes (*Strepera arguta*). There are at times as many as 40 birds together; they come to feed on the berries of the *Exocarpus*. Bush fires necessarily destroy much of the food of fruit-eating birds, and this may be one reason for their seeking food in cultivated areas. The Hill Crow-Shrike filches from the apple orchard, and leaves the trace of his presence in varying degrees of mischief. Sometimes only a puncture is made on the rind of the apple; generally a large piece of the fruit is scooped out; rarely is the whole apple eaten excepting the core. When these Crow-Shrikes are flying overhead the white basal portions of the inner webs of the primaries are very conspicuous, and may well serve as marks whereby they can be recognized by others on the ground. Beyond the ridge for about a mile the country is undulating, and slopes gently towards Norfolk Bay. The soil is of a turfy nature. *Epacris* abounds, and there are dwarfish orchids of pale hues and also sundews. In some of the hollows tall sedges grow, concealing marshy ground. Birds are not plentiful hereabouts, because of the paucity of trees and shrubs which harbour insects. In 1889 I saw the Ground Parrakeet (*Pezoporus formosus*) in this locality, but have not heard of its being there since that time. The Yellow-tail (*Acanthiza chrysorrhoa*) is a gregarious Tit, which prefers grassy hillsides, with a sunny exposure, near the shelter of trees or shrubs. In such situations flocks of about twenty systematically work patches of ground, tripping lightly over the sod in quest of seeds or insects. They find these conditions at Impression Bay. "Redbills" (*Hematopus unicolor*) and Pied Oyster-catchers (*H. longirostris*) visit this place, but rarely appear further south in Norfolk Bay.

Stray Feathers.

RADIATED GOSHAWK AND WOOD DUCK.—On the 18th of March I got a cheap duck. I had been putting horses into a paddock. In the adjoining paddock there were 20 or 30 Wood Ducks feeding. Suddenly they flew into the water. Looking to see the cause of their alarm, I saw one Duck quacking and making for the lagoon, with a Hawk running at her side and holding on to her neck. She got nearly to the water and then fell over. I waited till the Hawk started plucking her and then went over. The Hawk flew away, and I took charge. As far as I could make out it appeared to be a Radiated Goshawk. He must have been a new hand at the game, for he picked a thin Duck.—ERNEST D. BARNARD, Coomooboolaroo (Q.)

* * *

IN THE MELBOURNE ZOO.—A eucalyptus tree which is laden with blossom has, during the past month, been visited by numbers of White-plumed Honey-eaters, Brush Wattle-Birds, Sanguineous Honey-eaters, and a few Red Wattle-Birds. The Wattle-Birds try to drive the smaller Honey-eaters away, and when they fly at them they snap their beaks loudly, but the little birds soon return.—D. LE SOUËF. 15/7/02.

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A GRIMLY HUMOROUS SIDE OF THE DROUGHT.—In answer to the circular recently issued by the Union to members *re* "observing stations" for birds, the following is one of the replies:—"At present I am too much occupied among my dying stock to attend to anything else, but as they will all be dead ere long (unless we have sufficient rain very shortly), I shall then have more leisure to attend to the movements, &c., of our feathered friends."

* * *

EMU PARK (CENTRAL QUEENSLAND) NOTES.—The first Gannet of the season was seen diving off the coast here on 1st May. Talking Magpies (the big fellow with white spots on wings)—*Strepera graculina* (?)—appeared about same time. They fly about the bald hills during the day, and seek shelter in coast scrub at night. Butcher-Birds have been making havoc among Canaries at Rockhampton. One had a fly round here, and killed two Canaries hanging outside near an open house door. He then went for a Canary at the police station, and the constable shut the door of the room he boldly entered and made him prisoner, awaiting trial. Want of grasshoppers and small lizards in drought make the birds fearlessly ravenous. Nankeen Kestrels here in April have disappeared, starved out. Bee-eaters (*Merops ornatus*) not so numerous as usual. On 1st June a party of two guns, on Hummocky Island, about 10 miles off the coast, had 32 Quails. Wild Turkeys, starved off western

plains, are being shot on the coast clearings. Domestic hen eggs are 2s. per dozen—want of insect food. Small flock of Grey Plovers haunting bald hills here in April disappeared in May. Mr. Meston, Inspector of Aborigines, discovered Osprey's nest on Pinnacle Islet, off mouth of Coorooman Creek. Black-fellow attendant tried to reach it, but failed. Very glad.—W. M'I.

* * *

GRASS-BIRDS IN VICTORIA DURING WINTER.—During this winter, on three separate occasions, I have had the opportunity of noting the Grass-Bird (*Megalurus granineus*) near Melbourne. As some doubt seems to exist that this species does remain in this vicinity during the winter months, these facts will be of interest. At a swamp near Cheltenham, on 26th April, 1902, and again on 5th July following, several specimens were shot after patient waiting. At first the birds were nowhere to be seen, but after a while they ventured to the outskirts of the bull-rushes to feed. They seldom whistled. On the other side of Melbourne, on the Werribee Plains, the species was again noted on 9th June, being identified by its whistle in a "lignum" swamp.—A. G. CAMPBELL.

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NOTES ON THE ALBATROSS.—The tameness of the Albatross has not, I think, been noticed by some writers on the habits of this stately ocean bird.

I have frequently seen them close over the vessel's deck, keeping up with it, without the least symptom of fear. On different occasions I have seen them caught by hook and bait (when we have slowed down the engines or stopped altogether), and after being landed on deck and unable to rise on the wing, they have soon started to plume themselves, and seemed quite at home in their new surroundings, so that the Albatross is a fearless as well as a stately bird.

Mr. H. L. Tapley, of Dunedin, informs me that while travelling as a passenger in the s.s. *Hauroto*, Captain Anderson, in 1896, a large Albatross got its wings entangled in the patent log line and was unable to extricate itself. It was hauled on board and captured. Quite recently Mr. Tapley informs me that while on a passage from Dunedin to Sydney, in the s.s. *Quiraing*, May, 1902, an Albatross struck the fore rigging and fell on to the poop deck. It is remarkable that Mr. Tapley should have been an eye-witness of both of these occurrences (the only similar ones I have heard of), and also that the Albatross, though approaching the ship without fear, should have made such a mistake, as with their quick piercing eyes they always have the appearance of being thoroughly "wide awake."—(CAPT.) W. W. ALLEN, s.s. *Westralia*. July, 1902.

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QUEENSLAND CAMP NOTES.—18th April.—Saw first Robin

this year in garden at Retro station, being small Red-capped variety.

27th April.—Saw Robins, same variety, nearly every day during the week.

29th April.—Camped at well, near top of run (Retro), not far from the Peak Range, there being no surface water for miles. Next morning, early, the troughing, about 30 yards long, was lined with birds on both edges, the predominating sorts being Spotted Bower-Birds and Red-winged Lories; there were also great numbers of Peaceful and small Ground Doves, and a few Honey-eaters. I should think quite a hundred Lories could be seen at one time, and they made such a brilliant bit of colouring as one is seldom privileged to see. The Bower-Birds appear to be living almost solely on white cedar berries, which they swallow whole; they were simply ravenous for bread or scraps, and were a great nuisance. The Lories I noted feeding on seeds of the "fat hen" (a chenopodium, known in Great Britain as "goosefoot"), a tall weed, which has been of great value to the starving stock. Two Bronze-wings were also noted, with their feathers fluffed out and heads under wing, asleep, for some time after the other birds were busy. This camping near the water is not the usual custom of these Pigeons, as they generally come to water near sundown and fly back at once after drinking. The second morning they were on the same perches, but on the third (2nd May) they were not, or cleared earlier.

8th to 18th May.—Shifted camp to another well. Bower-Birds and Lories in profusion. Noted small flock of eight Betcherrygahs, which visited the well several days running and then disappeared; these birds are seldom seen on the downs, but keep to the tall gums on the watercourses. The Bower-Birds were so numerous and bold from hunger that the cook's life was a burden to him until he had destroyed a great number. He caught 15 and 20 a day, mostly cock birds, with iridescent plume on nape of neck, in two small gin traps. Several were kept in captivity for some days and devoured as much bread as they could get; they mimicked cats and Kite Hawks (Square-tail) splendidly, but fought incessantly and furiously. Magpies and Butcher-Birds also got caught, and on two occasions the large olive-green Honey-eater (or *Entomyza*) with bare blue patch on cheeks. Flocks of Grey Jumpers (Twelve Apostles) and "happy families" (Chatterers) also visited the camp, and I heard and saw White-eyes (*Zosterops*) on the tea-tree scrub, and also a Yellow Robin. Also noted several Red-capped Robins, male and female. Shot a Scrub Turkey at well, and several Wild Turkeys (Bustards), the latter being very numerous in good seasons, but rather scarce this year.

3rd June.—At Langton, with Mr. Menzies, went after a white-headed Dottrel he had seen. Lucky enough to get it,

and one of the sort that has been frequenting the same ridge for 18 months past. Skinned both birds for identification, and also a small yellow-breasted bird, which is a stranger to both of us. The white-headed Dottrel has not been noted here before, although Mr. Menzies has shot numbers of the others at different times, and seen them constantly.*

The ridge these birds like is of red soil, covered with boulders and pebbles of white limestone, and affords splendid protective colouring—in fact, it is almost impossible to see them till they fly. It is very probable that they nested here last year, as on 23rd October Mr. Menzies flushed a sitting bird on the road between Longreach and Ilfracombe, about 10 yards from the track. After diligent search he secured three eggs, partly incubated, and tells me the ground at the spot was strewn with boulders and pebbles of brown stone. Another Dottrel frequents the margins of all the larger waterholes, and apparently does not migrate, as Mr. Menzies has taken their eggs, and I have seen them at all seasons, and could easily procure a specimen if wished for.

The Little Whimbrel visited the downs last year, but I have no note of the date; large flocks of them were seen, but they seem to shift about more than the Dottrel. The country is mostly black volcanic downs, and has been devoid of grass for nearly two years, except in isolated patches. Got two small Plover, and saw one Spur-wing, which frequents a well and is a solitary bird. While helping Mr. Menzies to feed sheep on hay and chopped-up wattle tree, got Crow (or Raven), beautiful purple-black, with pearly white iris and dense black pupil. Iris tinged with light blue on inner edge, and a little muddy brown on outside edge.

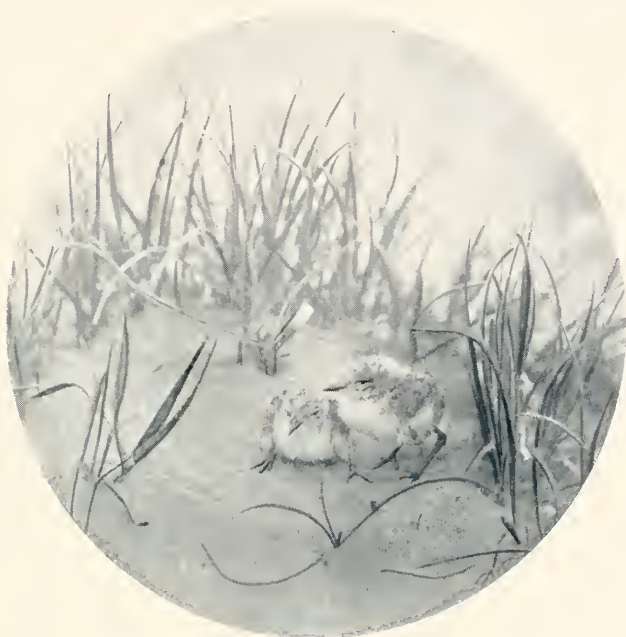
23rd June.—At Retro siding six Butcher-Birds and four Magpies were very tame, and were very dexterous in catching any scraps thrown to them. One handsome Black-throated Butcher would take a bit held up between the fingers.

In addition to the great mortality amongst the birds in this district—first from the heat wave, and then from failure of food supplies—I am afraid that cyanide of potassium, laid for opossums, is proving fatal to hundreds. Should an invading army of locusts or caterpillars make their appearance when the drought breaks, there will be a most deplorable dearth of volunteers to do them battle.—F. B. C. FORD. Survey Camp, *viâ* Springsure (Q.), 30th June, 1902.

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THE SEASON 1901-2 was the driest experienced here for some years, and hence a good deal of bird life was either conspicuous by its absence or a decided shortage in its numerical

* The Dottrels, including a remarkable white-headed one, appear to be the Oriental (*Ochthodromus veredus*), while the yellow-breasted bird is the Orange-breasted Chat (*Ephthianura aurifrons*).—EDS.



Young, in down, of Red-capped Dotterel (*Aegialitis ruficapilla*).

FROM A PHOTO. BY ROBERT HALL.



Black and White Fantail (*Rhipidura tricolor*) and Nest.

FROM A PHOTO. BY E. T. HAMERSLEY, YORK, W.A.

strength was apparent. Few of the lagoons and swamps had received their normal quantity of water, and this deficiency was further reduced by a great shortage in the spring rainfall. Consequent upon this the Rail family were rarely seen, and few observed nesting, whilst Snipe were only noticed upon one or two isolated occasions. Our northern visitants, such as Curlew, Sandpiper, Godwit, Golden Plover, &c., came in goodly numbers, but took their departure earlier than usual. By the end of March nearly all of these birds had left, none being observed late in April or in May, as has been the case in some seasons. Never before did I notice Spine-tailed Swifts before Christmas, but this season several were noticed during November, and, unlike the shore birds previously noticed, they remained very much later than usual. This was probably due to the very fine weather experienced and the consequent abundance of their natural food. As a result of the advance of civilization many of our feathered friends are fast disappearing, and this is especially noticeable with all members of the Hawk tribe, even the once common Brown Hawk and Harrier being seldom seen, whilst the once fairly plentiful Wedge-tailed Eagle is almost a rare thing. When seen it reminds me of the past, and calls to memory the time, 35 years ago, when I have seen a dozen at a time flying at varying heights, and one occasion I remember counting 16 in mid-air at one time. In marked and pleasing contrast to this is the increase in numbers of some of our very best insectivorous birds, such as Babblers, Magpie Larks, and some few others, which are increasing rapidly, partly from the fact that cultivation does not decrease their food supplies, and also a tendency upon the part of intelligent individuals to leave them alone and recognize them as friends; and last, but perhaps not least, the warnings given by State school teachers to their pupils that birds' nests must not be destroyed. I have very carefully observed some species of birds that were regarded by some persons as being migratory and by others as residential, with a view to a settlement of this important matter. It is, I believe, very difficult of elucidation, as, though isolated pairs and single specimens of some species apparently remain all through, still the main body seems to disappear. I refer more particularly to such birds as the Ground-Lark (*Anthus*), Welcome Swallow, Cuckoo-Shrike, Fan-tailed Cuckoo, &c., all of which I have observed up to the present. Others, I believe, are noticed less at this season than in spring and summer owing to their silence. At one time very much of this locality was thickly timbered by banksias, and at that time all local members of the *Meliphagidæ*, or Honey-eaters, were much more numerous than at present, as the honeysuckles, so called, are nearly all destroyed by the settlers opening up the timbered areas. The loss of this timber has had a very marked effect upon the bees as well as upon birds, on account of its very valuable honey-

producing flower. The extremely dry summer drove some birds south of their usual haunts, and several flocks of Straw-necked Ibis were seen, and only a few days ago a beautiful specimen of the Sanguineous Honey-eater (*Myzomela sanguinolenta*) was obtained by me here (Somerville)—a new bird for this district. In conclusion, I cannot refrain from drawing attention to the fact that the drainage of those immense swamps, the Carrum Carrum and the Kooweerup, has deprived countless thousands of Ducks, Swans, Spoonbills, &c., of their natural food, and, as a consequence, where one used to see many thousands of these birds now none are to be seen. As a result also they are deprived of perhaps the finest nesting areas in this State. If I may be permitted I should like to add a word of praise *re* the protection of the Kangaroo, as, though it had practically disappeared, since protection has been accorded several mobs of 10 to 15 may be seen near here.—GEO. E. SHEPHERD. Somerville, 30/6/02.

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NOTES FROM POINT CLOATES (N.-W.A.)—5th January, 1902.—Painted Finches (*Emblema picta*) are becoming much more numerous in this locality. On this date and for some weeks afterwards they were constantly seen.

5th February.—I was about 60 miles inland from here, where there is much "claypan" country. As there had been a heavy thunderstorm previously, the flats were covered with water, and birds numerous. Red-necked Avocets, White-headed Stilts, Coots, and various Ducks were very abundant, and there were also numbers of Black Swan and Marsh Terns (*H. hybrida*). A Black-fronted Dottrel (*Æ. melanops*) that fell to my gun was just on the point of laying, and by the side of a pool was a Magpie Lark's (*Grallina*) nest with four eggs. A little distance out on the grassy flat was a nest of *Mirafra woodwardi* (Rufous Bush-Lark) containing five fresh eggs. The nest was found through seeing the female bird persistently creeping close round the camp fire at dusk. Concluding the bird had a nest, my native boy and self kept quiet, and were rewarded by seeing her settle on the eggs. The nest was deep, being below the surface of the ground, in a hollow, and snugly concealed in a tuft of green grass. The eggs correspond with Mr. Hall's description (*Vict. Nat.*, September, 1901). On the way home we found a nest of Tawny Frogmouth, with two eggs, built 15 feet from the ground, in a mallee tree overhanging the road. I have previously taken eggs of this bird in the months of July and October (31st).

23rd February.—Shot a female White-tailed Robin (*Eopsaltria pulverulenta*) in a dense patch of mangroves near the North-West Cape, and an hour or two after, within a few yards, what appears to be an immature Grey-breasted Robin (*E. georgiana*),

but the latter was too much mutilated by having been shot at close quarters to be certain of the species.

15th March.—Oriental Dottrel (*O. veredus*) were packing on the salt marshes in vast flocks, preparatory to their flight to the land of their nativity in the north. Contrary to their usual habit, they were extremely wary, and it was only after much driving round in the buggy that I secured a good raking shot, bringing down several specimens. These proved to be, as I had suspected, in almost full breeding plumage, which is very striking, and much more handsome than their dull summer (or, rather, winter) plumage. The birds were coated with fat, several of them bursting on falling on the hard ground. A last small mob of these birds was seen on 28th March.

3rd April.—Great numbers of the elegant Roseate Tern were about Fraser Island, also of the Noddy (*A. stolidus*).

26th April.—When sailing near this island we noticed some numbers of Crested Terns (*S. bergii*) hovering about one of the sand hummocks. On landing we found 14 eggs, some of them most handsomely marked. They were laid within a radius of three yards on one of the highest points of the island, each egg being laid singly in a depression of the fine sand, no material having been carried to form a nest. A family of Orange-fronted Chats (*E. aurifrons*) appeared about this date, and have kept closely to one patch of ground near the beach ever since.

8th May.—An immature Straw-necked Ibis (*G. spinicollis*) settled on the roof of the kitchen, where it was attracted by seeing the tame Ibis, which has now been here with full liberty for nearly two years (see *Zoologist*, July, 1901). The new comer was only recently fledged. It allowed us to approach closely, and readily ate scraps of meat thrown to it. We managed to catch it at night and clipped one wing, and it has not since left the vicinity of the house, and seems quite contented. The following day a flock of about 50 wild Ibises settled near the house, seeing the old bird feeding. It fed with them most of the day, and accompanied them in their flights, but when the wild birds flew away in the evening it did not offer to go with them.

20th May.—Seeing a small flock of Waders on the beach, I fired one barrel, and picked up one Golden Plover, three Large Sand Dottrel (*O. geoffroyi*), one Turnstone, and two Little Stints. Silver Gulls, which are numerous here most of the year, feeding on scraps about the kitchen and natives' camps, disappeared early in January, doubtless to breed in the south, as their eggs have never been taken here. Up to the date of writing (27th May) only odd birds have returned.

In vol. i., part 2, of *The Emu*, the tenth line from bottom of page 56 should read October, 1900. "Last year" is misleading, as the article was written in October, 1901, but did not appear in print until January, 1902.—THOMAS CARTER.

WESTERN AUSTRALIAN NOTES.—*A Lusus Naturæ*.—On Monday, the 2nd June, I shot, on the Canning River, near South Perth, a Western Scarlet-breasted Robin (*Petræca campbelli*), wholly white barring the red breast, and except a faint tinge on the abnormal white feathers covering the crown of the head. The eyes in colour were almost black. In his "Nests and Eggs," p. 136, Mr. Campbell mentions a similar case of this Robin. Strange to say last spring-time I shot, at about the same spot, a Long-billed Honey-eater (*Meliornis longirostris*) which exhibited evidences of partial albinism.

I also saw on the same day, and in the same locality, a pair of Sacred Kingfishers (*Halcyon sanctus*), or, if Mr. Campbell's provisional new species can be established, then *Halcyon westralianus*. I saw a pair of similar birds in the same locality during last winter.

Melissa Worshipers.—The banksia scrubs in and around the Perth district (the trees of which are now bearing candelabra of handsome crimson and honey-coloured cones) are alive with companies of Tawny-crowned Honey-eaters, Brown Honey-eaters, Singing Honey-eaters, Long-billed Honey-eaters, Moustached Honey-eaters, and the Little Wattle-Birds.

Wood-Swallows.—The Wood-Swallows are still with us, and doubtless will, as hitherto, remain all the year round.

Bee-eaters.—The Bee-eaters, which arrived here last year in the first week of October, left us in March.

A Late Brood.—On Good Friday last (28/3/02) whilst at Applecross, on the Swan River, near Perth, I observed two young Swamp Hawks in the nest, being fed by their parents.

Musk Ducks.—A company of these birds, numbering some eight or nine, were moving about the shallows on the South Perth side, about 100 yards from the course of the ferry boat. My attention was drawn by a succession of "ponks," intermingled with similar monosyllabic notes, which appeared to be the same sound stripped of its resonance. The surmise proved to be correct, as I plainly perceived. The "ponk" followed the action of the bird (which appeared to be the male bird disporting himself before the females) when he thrust his head quickly under the water. Simultaneously with the thrusting of the head under the water the bird struck the water with the feet and swished the tail. The lighter and less resonant sound was uttered above water, and was accompanied with a prolongation of the neck and a lateral swish of the tail. It is quite probable that the striking of the water with the foot, mentioned in the former case, has given rise to the local idea that the sound was produced by such action and not in the normal way.—A. W. MILLIGAN. Perth, 11/6/02.

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AN INTERESTING OUTING.—WHITE-FACED TERNLETS, NANKEEN HERONS, &c.—In November, 1900, I was invited by

Mr. Abjornson, Sub-Inspector of Fisheries for the Swan River, to accompany him in a cruise round the schnapper spawning grounds in Safety Bay, about 15 miles south of Fremantle—an offer which was gladly accepted, especially as he said some of the islands were frequented by many birds.

The 15th found us standing out to Garden Island in a 19-foot half-deck fishing boat. This island, about nine miles by one in extent, is mostly covered with dense scrub, quite impossible to penetrate in most places. The only living things appear to be wallabies, lizards, and carpet snakes; no birds were noted. The second place reached, Penguin Island, was about an acre in extent. A large Osprey's nest was seen on the top of a small hummock, which had, according to my host, been used for many years, and, indeed, looked like it, since it was over 4 feet high and about 6 wide at the base; it had the usual composition of sticks, lined with sea-weed, grass, and wool, and contained two fully fledged young birds, which were forthwith captured, and, on our return, deposited in the Perth Zoological Gardens. Several Little Penguins were seen; some were nesting under ledges of rock. A Nankeen Heron flew away, and was eagerly chased by a Kestrel, which evidently had a nest near. A pair of dark green Honey-eaters was busily engaged in feeding their young. Sailing hence we came to two small adjoining islands, which were covered with Cormorants' old nests (evidently the Pied, since several of these birds were seen fishing close by), built of coarse grass and sea-weed. They were placed in groups of 20 to 50 on the bare rock. Within a hundred yards was another island, over which some hundred or so Silver Gulls (*Larus novæ-hollandiæ*) hovered, but we could not find any eggs or young birds, only some old Cormorant nests, but probably the Gulls were nesting under some cliff or in a cave, with which these islands abound. We then made for the far side of the bay, where, separated by a narrow channel from the mainland, was a low sandbank, about an acre in extent, over which were flying in a state of great agitation some two hundred Little Terns (*Sterna nereis*), which kept up a continuous din with their short piping cry. On the seaward side of the bank was a number of their eggs, laid in very slight circular depressions in the sand about 4 inches in diameter. The clutch was two, but in a great number of cases only one seemed to hatch, for many nests were found with an addled egg and the remaining shell of the one which had produced a chicken. No young birds except the very smallest chicks were at first discernible, but upon walking round a bank of sea-weed, just above high water mark, many were found, but so perfectly did their feathers (cream, with longitudinal chestnut markings) harmonize with the sand and rubbish that it was difficult to detect them. The little birds, too, knew quite well where their protection lay, for, with head and neck out straight, they lay like stones.

The last "port" of call was Bird Island, or, as it is called by the local fishermen, "Ibis Rock." It consists of two rocky peaks, about 50 yards from the mainland. The landing place is small, and the approach rocky, so it is only safe in still weather. Upon our approach about 200 Nankeen Herons (*Nyticorax caledonicus*) flew up. Later on they were found on a reef. The first peak yielded only a few broken Heron eggs and a beautiful nest of these birds in a small cave, but upon reaching the second rock Herons in all stages of life were in numbers; under every plant were seen young birds or eggs, the latter laid upon the bare ground, with a ring of sticks about a foot in diameter round them, evidently to prevent them from rolling away, for upon sloping ground the sticks were placed upon the lower side only. The only shrub on the island—a tea-tree, about 3 feet high, had a well-made nest of twined sticks and grass in its centre. This nest was nearly flat, and 14 inches in circumference, and contained the unusual number of five eggs. The usual number was three, and in some cases two. The fresh eggs, with their pretty green, delicately grained, non-lustrous shells, were very beautiful; a very little incubation, however, turns them pale blue. They varied a good deal too in shape and size. As the wind was rising, and the skipper was anxious for the safety of his craft on this rocky shore, our visit to this interesting spot had to be cut short. So, with some eggs and young birds for museum and zoological purposes, we dropped into the boat and sailed for home.—SHERBOURNE LE SOUFF.

* * *

WOOD-SWALLOWS IN THE MURKAY DISTRICT DURING WINTER.—I went to Berrigan over Sunday, and on my way back yesterday I saw five or six Wood-Swallows (*Artamus sordidus*) all in the one spot, about 10 miles from here and seven or eight from the river as the Crow flies. I have not seen any of these birds since April.—J. A. TRASK. Tocumwal, N.S.W., 29/7/02.

* * *

JACKASSES AT SHOOTING MATCHES.—Recently whilst watching a Sparrow-shooting match at Oakleigh I observed a pair of Laughing Jackasses (*Dacelo gigas*) repeatedly fly down from a neighbouring tree and carry off the mortally wounded Sparrows within 25 yards of the shooters. In all they demolished nine Sparrows. I was informed that directly the Jackasses hear the shooting they fly over to the shooting ground and wait for their prey.—A. MATTINGLEY.

* * *

A FOREIGN "STRAY."—When the ship *Desdemona*, which arrived in Melbourne recently, was about 1,000 miles off the Brazilian coast, or in about lat. 20 deg. south and long. 38 deg. west, a small and beautiful greenish species of Gallinule or

Moor-Hen flew on board, very much exhausted. The date was 10th June. The "stray" was caged and cared for, and began to feed at once. It is now the property of one of our members, Mr. S. Drayton, and is doing well at Brighton.—A. J. C.

* * *

THE DOUBLE-BANDED DOTTREL (*Ochthodromus bicinctus*) appears to visit Victoria regularly on migration. Writing from Geelong in July Mr. C. F. Belcher writes:—"Hundreds of Double-banded Dottrels are on the flats between St. Albans and the Breakwater, mostly on the training track. Nearly all in immature plumage." During the same month strings of these Dottrels were exposed for sale in the Melbourne market.—A. J. C.

* * *

WILD BIRD SHOWS.—The various Melbourne bird shows were generally a success this year. In Parrots alone some 30 species were exhibited, including the Alexandra Parrakeet (*Polytelis alexandree*) from the interior, and the Smutty Parrakeet (*Platycercus browni*) from the Northern Territory. The Rosella section at the South Suburban Canary Show had 35 entries—a "lively" task for the judge. Queensland Grass-Finches appear to be gaining favour, but none not previously shown were exhibited. A decided novelty was a pair of Honey-eaters (*Meliornis novæ-hollandiæ*) exhibited by our member, Mr. Edward D'Ombraïn.

It is a pity that these interesting exhibitions are divided, and only form so many "side-shows" to dog, poultry, &c., exhibitions. Could not a National Bird Show be held, after the manner of the famous bird shows at the Crystal Palace, England?—A. J. C.

* * *

THE DIRE DROUGHT.—*Various Notes*.—Since the end of April the following species have been appearing here, no doubt being driven to seek for food on the coast on account of the severe drought now prevailing inland:—*Gymnorhina tibicen*.—Very plentiful everywhere, feeding about the ploughed fields in flocks of 10 to 20. *Cracticus robustus*.—Also fairly plentiful. Crows (both *Corvus* and *Corone*).—Very numerous; residents say they never noticed so many, and accuse them of *eating the corn!* *Grallina picata*.—Though resident in fair numbers all the year, this species is now very plentiful. Large flocks may be seen feeding anywhere, and I notice them about sundown flying across to the timber on the other side of the river in hundreds. Besides these species *Halcyon pyrrhopygia* is numerous, for I saw no less than seven along the fences in one afternoon, and have noted others since. This speaks for the severity of the drought, for the Red-backed Kingfisher is, I think, considered a strictly inland species; and Macknade

Plantation, where I observed them, is only two or three miles from the sea. I have never seen this species here before.—E. H. WEBB. Herbert River, N.Q., 19/6/02.

Since forwarding you my last notes *re* certain species of birds now to be seen in this district (Herbert River) on account of the drought inland, I have observed several more kinds. While out Duck-shooting on a lagoon close to the sea I came upon a small flock of about a dozen Red-kneed Dottrel (*Erythrogonys cinctus*) which were feeding on the mud flats, and also saw upwards of half a dozen Pratincoles (*Stiltia isabella*) in a few hours. This was in the last week of June, 1902. Also, during the first two weeks of this month (July), I have observed several flocks of *Ephthianura tricolor* busily feeding round the margins of the waterholes and lagoons. It is surely unusual to see Pratincoles and Red-kneed Dottrel so close to the sea.—E. H. WEBB. 31/7/02.

Large numbers of birds are dying about here from sheer starvation—Magpies, Jackasses, and smaller birds.—H. GREEN-SILL BARNARD. Coomooboolaroo, Q., 17/7/02.

Bronze-winged Pigeons, driven out of their usual haunts, have been swarming of late in Mr. Cusack's paddock, not far from town. Pot-hunters innumerable have had their eyes upon them, but Mr. Cusack prohibits trespassing, and the birds are enjoying some measure of protection. Wild Turkeys are being driven to the coast country by drought, and their slaughter proceeds apace.—Rockhampton *Bulletin*, 10/6/02.

The drought, which has continued for two years in this district, is proving fatal to vast numbers of birds, and tempting others out of their usual habits—Magpies and Butcher-Birds especially, being ravenous, owing to the dearth of usual food, have not the decency to wait as long as the Crows, but attack a sheep's eyes as soon as it gets down.—F. B. CAMPBELL FORD. Survey Camp, *via* Springsure, Q., 6/7/02.

Warracknabeal.—Several Emus have lately been seen about the district, where water is more plentiful than further north. Since the settlement of the Mallee country they had pushed further back, and it is supposed the drought has sent them down again.

Sheep Hills.—A large number of Emus, evidently starved out of the Mallee, are at present in this district.—Melbourne *Argus*.

Only yesterday afternoon, whilst walking in the University grounds, I caught a glimpse of a small bird with a bright red head exploring the flowers on a pittosporum bush, but it was disturbed before I could obtain a good look at it. Thinking that I was on the track of the Sanguineous Honey-eater I repaired this afternoon to the Melbourne Botanical Gardens, and was rewarded by finding a large pink-flowered ironbark tree on the lawn above the lake simply swarming with Honey-eaters, of which I counted five different kinds—the Wattled, the Spiny-

cheeked, the New Holland, the White-plumed, and last, the least in size but the greatest in importance, were some 10 or 12 of my little friends with blood-red heads. No doubt the drought was responsible for these tiny tropical beauties being driven in such numbers so far south.—ARNOLD E. RODDA. Carlton (Vic.), 14/7/02.

* * *

SOME ARRIVALS AND DEPARTURES OF TASMANIAN BIRDS.—The following are a few dates of arrival and departure, in Tasmania, of some of the migratory birds. Up to the year 1899 the notes relate to the district of West Kentish, eight miles from Wilmut; after that date events relate to Wilmut. As will be seen, many of the notes are somewhat brief and hastily entered, but as they are made near the southern limit of some of the birds mentioned the notes may not be without interest:—

1892 (arrivals).

11th August—Wood-Swallows.

2nd September—Fan-tailed Cuckoos.

4th September—Welcome Swallows.

30th September—Pallid Cuckoo.

Note *re* Welcome Swallows says they had been noted at Jerusalem, towards the south-east of the State, as arriving three weeks earlier than at West Kentish.

1893.

28th February—All migratory birds disappeared for a few weeks, but have now returned, for harvest, evidently.

March—Above have finally left.

26th July—Pallid Cuckoo.

11th August—Wood-Swallows.

16th August—Fan-tailed Cuckoo.

September—Bronze Cuckoo.

16th September—Welcome Swallow.

4th October—Cuckoo-Shrike (*G. parvirostris*). I have noted this bird because it completely leaves this district from April to October. Doubtless it goes to the coastal districts, where the cold is less severe. On 16th August a very heavy fall of snow occurred; Cuckoos disappeared after this for some days.

1894.

26th August—Swallows (Welcome) at Latrobe.

30th August—Swallows at Antil Ponds.

22nd August—Bronze Cuckoo.

1895.

17th September—Cuckoos, Wood-Swallows, and Welcome Swallows (nearly a month late).

October—Native Hen (*Tribonyx mortieri*) with chicks.

1896.

1st April—Migratory birds have gone.

May—Native Hen with chicks around her.

7th July—Welcome Swallows.

21st July—Pallid Cuckoo and Wood-Swallows arrived.

1897.

15th March—Migratory birds have left.

August—Cuckoos and Swallows arrived.

October—Cuckoo-Shrike.

1898.

No entry of any kind to be found among my notes.

1899.

Very wet and prolonged winter. Birds all later than usual. No dates recorded. This year Cuckoos and Swallows were very few in number.

1900.

Very severe, frosty winter. Swallows in *August*. Cuckoos early in *September*. Wood-Swallows and Cuckoo-Shrike, *October*.

1901.

4th *August*—Pallid Cuckoo.

11th *August*—Welcome Swallows.

20th *August*—Fan-tailed Cuckoo.

About 15th *September*—Bronze Cuckoo, and a few days later Wood-Swallows were about.

1902.

Birds remained till near the end of *April*.

—(MISS) J. A. FLETCHER. Wilmot, Tasmania.

From Magazines, &c.

IN the *Proc. Linn. Soc. N.S. Wales*, vol. xxvi., part 4, recently received, Mr. A. J. North, in brief but interesting notes on Cuckoos, claims that the eggs of the Fan-tailed Cuckoo (*Cacomantis flabelliformis*) and the "Rufous-tailed" Bronze Cuckoo (*Chalcococcyx basalis*) had not been previously recorded from the nests of the Lambert (Variegated) Wren (*Malurus lamberti*). He is correct regarding the smaller Cuckoo, but Dr. E. P. Ramsay has been mentioned as the original authority for the Lambert Wren as a foster-parent of the Fan-tailed Cuckoo—*vide Vict. Nat.*, vol. xiv., p. 101 (Nov., 1897).

* * *

AT the October (1901) meeting of the Linnean Society of New South Wales, Mr. A. J. North, C.M.Z.S., contributed a note on the synonymy of *Malurus cyaneus* and *M. superbus*. The bird named *Motacilla cyanea* by Ellis was met with during the stay of Captain Cook's vessels, the *Resolution* and *Discovery*, in January, 1777, at Adventure Bay, Bruni Island, near the south-east coast of Tasmania. At that time Bass Strait had not been discovered, and the latter island was regarded as the southern extremity of Australia, and is so figured by Ellis, who was assistant-surgeon to both vessels, on the chart accompanying his work, published in 1782. The name of *Malurus cyaneus*, Ellis, Mr. North states, will therefore have to stand for the Tasmanian species of Superb Warbler or Wren, *i.e.*, the Long-tailed (*gouldi*), and that of *Malurus superbus*, Shaw, for the well-known Blue Wren inhabiting south-eastern Australia.

According to the strict law of priority no doubt Mr. North is correct, and he is to be commended for his discovery—nearly as

good as naming a new species. But is it wise to correct a mistake that has lasted for a century and a quarter and by usage has become accepted? Any alteration of nomenclature of such a common species as the familiar Blue Wren will surely lead to confusion, except, perhaps, amongst cabinet workers.

* * *

Papers and Proceedings of the Royal Society of Tasmania.—A volume (1900-01) recently issued contains a "Systematic List of Tasmanian Birds," by Colonel W. V. Legge, F.Z.S., &c., President of the Australasian Ornithologists' Union.

In 1886 a "Systematic List" was drawn up by Colonel Legge, the various orders, families, and sub-families into which the Tasmanian birds were divided being classified on the same system as that adopted in his "Birds of Ceylon." That list has now been revised, and the universally received nomenclature of the "British Museum Catalogue" employed, while the vernacular names adopted are from the Australasian Science Association's List (1898).

In his introductory remarks Colonel Legge drops an interesting hint. The Tit found by Gould in Tasmania, and named after the Rev. J. T. Ewing (*Acanthisa ewingi*), has since been considered identical with the well-known "Brown-tail" (*A. diemenensis*); but Colonel Legge is of opinion that the fact of the species being identical has not been established, as further research may lead to the re-discovery of the Ewing Tit.

The list, which enumerates three species short of 200, should prove a useful reference, not only to Tasmanian workers, but to Australians. Who is the forthcoming ornithologist to write the "history" of the 197 species through Tasmanian spectacles?

* * *

"QUEENSLAND Birds, Partly or Wholly Insectivorous," is the title of a paper contributed by Mr. Kendall Broadbent, of the Queensland Museum staff, to the *Proceedings and Transactions Royal Geographical Society of Australia* (Q.), vol. xvii.

The list mentions over 300 species of birds, arranged in parallel columns, under "Common name," "Scientific name," and "Geographical range," with various footnotes, references showing whether the birds feed on "small mammals, reptiles, and insects," "insects and scrub shells," "fruit and insects," "fruit and seeds," &c.

Mr. Broadbent is sound generally in his scientific nomenclature, but his long and varied experience collecting in the bush has apparently led him into some bush or local phraseology regarding many vernacular names. The following may be cited as examples:—"Creek Kingfisher" for the Blue or Azure Kingfisher; "Chinchilla Diamond-Bird" for the *Pardalotus assimilis*, which is found in other localities from Queensland to Victoria; "Cardwell Diamond-Bird" for *P. affinis*, of

still wider range. The Cuckoo-Shrikes (*Graucali*) are all called "Mutton-Birds," the Oreoica the "Ventriloquist-Bird," the Drongo-Shrike has "Fish-tail" added to its name, and the *Smicrornis* is termed the "Wee-bill Gerygone," &c., &c.

Regarding the geographical range, Mr. Broadbent records for the first time several species new for Queensland, namely:—*Pachycephala lanioides*, *Pacilodyras cerviniventris*, *Menura superba*,* *Acanthiza pyrrhopygia*, *Calamanthus fuliginosus*, *C. campestris*, *Poephila acuticauda*, and *Cinclosoma castanonotum*. But probably more proof will have to be forthcoming before students will believe that *Pachycephala gilberti* (Gould) is found at Cape York Peninsula and *Eopsaltria gularis* (Quoy) in Victoria.

When the Aust. O.U. takes in hand its official "Check List of Australian Birds," Mr. Broadbent's paper will prove extremely useful as a local reference.

* * *

IN "Appendix F," *Report on Exploration of North-West Kimberley*, 1901, by Fred. S. Brockman (Leader), Mr. A. W. Milligan, Honorary Ornithologist to the Western Australian Museum, has reported, through Mr. Bernard H. Woodward, F.G.S. (the Curator), on the birds collected by Dr. F. M. House, the naturalist who accompanied the expedition.

The collection contains 43 skins, the number of species being 29. Dr. House is evidently a discriminating collector, for out of that small consignment one species is quite new to science, while five are new for the district of North-Western Australia—a very creditable result, considering the difficulties of moving with a restless exploring party.

The new species is an extremely interesting one—an *Amytis*—which has been deservedly named *housei* by Mr. Milligan, after its discoverer, but on account of its characteristic colouring to be known on the vernacular list as the Black Grass-Wren. Dr. House's field observations are that—

"This bird was first found near Camp F.B. 25, where the surrounding country was exceedingly rough, and strewn with piled-up masses of sandstone, in colour chiefly shading from red to black. It was observed running over the boulders, with which its colouring harmonizes so perfectly that it might easily pass unnoticed. In running the bird lowers the head and tail, giving it a peculiar appearance, not unlike that which the Pheasant Coucal presents when running on the ground. Its distribution seemed to be entirely determined by the colour of the rocks. It was only observed running over the sandstone, and only in places where the colouring of the rocks harmonized with its own."

* Precise locality given is King's Creek. King's Creek comes out of the main range at Pilton, and runs through the Darling Downs for about 28 miles, joining the Condamine River at Clifton. The creek is famous for fossils. Timber-getters report that its head waters are crowned with fern trees, overshadowed with principally "spotted gums" (eucalypts), and that the gullies thereabouts are scratched all over by Brush Turkeys, or *Talegallus*, as well as by Lyre-Birds.—EDS.

The following is Mr. Milligan's technical description of the new species :—"Head and neck, sides of face, chin, and throat lamp black ; regularly and evenly striated with white silky feathers ; faintly tinged on sides of face with faint chestnut markings, more emphatic on chin and throat ; whole of back and upper tail coverts very deep dull chestnut ; upper portion of back showing black feathers and silky white stems ; lower portion of back showing faint striation caused by light chestnut-coloured stems ; tail lamp black ; tail feathers eight, terminating, excepting 6th and 8th, co-equally ; chest and abdomen lamp black, the former distinctly striated with silky white, the latter much fainter ; legs black ; wings, 1st quill materially shorter than 2nd, similarly and successively 2nd, 3rd, and 4th ; 5th, 6th, and remaining quills almost of equal length ; wings black, upper coverts burnished and edged with chestnut, and showing chestnut shafts. Under surface of wings blackish. Total length, 8 inches ; tail, $3\frac{1}{2}$ inches ; tarsus, 1 inch ; mandibles—from gape to point $\frac{3}{4}$ -inch, from forehead to point $\frac{5}{8}$ -inch ; wing, 3 inches."

The species new for the North-West are :—*Chibia bracteata* (Drongo), *Graucalus hypoleucus* (White-bellied Cuckoo-Shrike), *Malurus amabilis* (Lovely Wren), *Pardalotus melanocephalus* (Black-headed Pardalote), and *Turnix olivii* (Olive Quail).

As the first three have been recorded for the Northern Territory (of South Australia), it is only natural to find their habitat extended to North-Western Australia, but it is an ornithological surprise to find the Black-headed Pardalote of north-eastern parts in the north-west. Regarding the Olive Quail very little is known. The original specimen (described by the Hon. Walter Rothschild) was secured on the north-eastern coast. Those observed by Dr. House in the north-west were in sandstone country, in the neighbourhood of Charnley and Calder Rivers. Only two or three birds were seen together.

* * *

"ON a Collection of Birds from Western Australia." This somewhat technical article is contributed by Mr. Robert Hall to *The Ibis* (January and July parts), a journal which, by the way, is to be commended for the prominence it has hitherto given to Australian ornithology. Any student who does not read *The Ibis* is at once "out of the running."

The collection, the subject of Mr. Hall's remarks, was obtained by himself between Albany and the Houtman's Abrolhos, from 23rd September to 8th November, 1899, and represents 69 species, numbering 156 specimens. To secure this collection three classes of country were invaded—the heavily-timbered tracts of the south-west, the flat region above them, and the islets and shoals of the Abrolhos, some 50 miles off the coast. Although the last-mentioned locality has been fairly well worked

by previous collectors (individually mentioned by Mr. Hall), nevertheless Mr. Hall was enabled to pick up a few "strays"—namely, *Cinclorhamphus rufescens* (Rufous Song-Lark), *Halcyon sanctus* (Sacred Kingfisher), *Petrarca goodenovii* (Red-capped Robin), and *Phaps elegans* (Brush Bronze-wing). At the end of the article, in the form of an appendix, is a "Revised List of the Birds (48 species) Found on the Houtman's Abrolhos and their Nesting Dates." Regarding the description of the wonderful bird congregations there, the writings of Gilbert and other former visitors to the locality are fully confirmed, with a few fresh sidelights added. Here is an example: In mentioning the Sooty Terns and Noddies nesting in close proximity to each other, he states:—"When some of the eggs are exchanged the birds make no objection, but 'sit on.' The 'Noddies' will hatch the 'Sooties' eggs, and feed the young until they are ready to run about, but no longer."

Touching *Petrarca campbelli*, Mr. Hall's field observations confirm this species of Dr. Bowdler Sharpe. "I was specially pleased," Mr. Hall states, "to find between 15 and 20 individuals of this species in the hill-country of Western Australia, and each time to note the large black cap and small white forehead that convinced me of its being distinct from the eastern *P. leggii*."

On the other hand, in the author's opinion *Rhipidura preissi* (Western Fantail) is identical with the familiar *R. albiscapa* of eastern parts.

Regarding the western White-naped Honey-eater (*Melithreptus chloropsis*), Mr. Hall writes:—"From personal observations, and from my collection of skins, I conclude that there is a western representative of *M. lunulatus*," and questions the wisdom of Dr. Gadow in amalgamating the two species (*vide* Brit. Mus. Cat., vol. ix., p. 204). Mr. Hall was probably not aware that the species had again been separated in a more recent work—"Nests and Eggs" (Campbell), page 361.

Mr. Hall has a "passion" for Pardalotes. Here is a good sample of elaboration:—"I secured a specimen of a Pardalote to determine the species, and concluded that it was *P. affinis*. Upon re-examination at home I was very much surprised to find the wings marked with white as in *P. ornatus*, while the bold specula were yellow. This constituted a phase not hitherto recorded, as *P. ornatus* is only known to assume the scarlet tipping. If the sub-species, *P. assimilis*, is allowed to have so wide a range in the colouring of the speculum as scarlet, crimson, orange, or yellow, the same may be the case here. I feel disposed to consider it merely a matter of time to discover that birds with the scarlet and lemon specula exist in one or more areas of the Continent, and then the species will be placed on the same footing as the sub-species as regards the speculum.

"As for the species, *P. affinis* (always yellow-tipped), I believe

it to be only a phase of the sub-species, *P. assimilis*. On a previous occasion (*Proc. Linn. Soc. N.S. Wales*, vol. xxiv., p. 472, 1889) I proved *P. assimilis* to have only the third quill edged with white (scarlet speculum), and the speculum may be yellow, just as in the 'third and fourth quill' phase. If this is really so, and I see no reason to the contrary, there is nothing to distinguish it from *P. affinis*. Proof will doubtless be forthcoming in support of my view, as specimens come in from time to time, even if the delay is as long as in the finding of the specimen under review. I shall then place *P. affinis* along with *P. assimilis*."

Altogether, Mr. Hall's article, especially regarding descriptions of fledglings and immature birds, is a valuable contribution to ornithological research.

* * *

DR. J. W. B. Gunning, Director of the Pretoria Museum and Zoological Gardens, sends lists of recent additions of mammals and birds to the gardens. Among the latter the following Australian species appear:—Winking Owl (*Ninox connivens*), Chestnut-eared Finches (*Taniopygia castanotis*), Spotted-sided Finches (*Staganopleura guttata*), Long-tailed Finches (*Poephila acuticauda*), "Parson" Finches (*P. cincta*), Gouldian Finches (*P. gouldiae*), Banded Finch (*Stictoptera bichenovii*), Blue Mountain Lorikeets (*Trichoglossus novæ-hollandiæ*), Crested Pigeons (*Ocyphaps lophotes*), Magpie Geese (*Anseranas semipalmata*), Laughing Jackasses (*Dacelo gigas*), two Emus (presented by the late Right Hon. C. J. Rhodes), besides six Australian "Moonies, whatever these may be. Dr. Gunning would be glad of any exchanges with or donations to the Pretoria Gardens.

* * *

COCKATOOS AS "RESISTANTS."—A resident in the Northern Territory, whose homestead is adjacent to a section of the overland telegraph line between the Katherine and Daly Waters stations, explains in a recent letter the most frequent causes of delay in the transmission of messages as follows:—"At present (1st May) there is a frequent but brief loss of current taking place, which has caused much annoyance and baffled the authorities, because it occurs mostly in the morning and evening. Operators sent from the two stations to investigate have discovered that Cockatoos (Galahs), which frequent a pool of water near the spot where the leakage is located, perch on the top telegraph wire, and, Parrot-like, use their beaks upon the second, but only for a moment; with a shrill cry they take flight. In the meantime, however, the current has escaped, and if a message were going through its continuity was broken."—*The Argus*, 4/6/02.

Reviews.

NESTS AND EGGS OF BIRDS.

[Australian Museum, Sydney. Special Catalogue No. 1. "Nests and Eggs of Birds Found Breeding in Australia and Tasmania," by Alfred J. North, C.M.Z.S., &c.]

AFTER a delay of 11 months this handsome work has reached its second part, containing pp. 37-120, plates B ii.-iv. This deals with the various Bower-Birds, Orioles, Fig-Birds, Drongo-Shrike, Magpie Lark, Shrike-Thrushes, Cuckoo-Shrikes, and Caterpillar-eaters, and forms a most interesting and valuable study in the life-history of the birds named. The general get-up is equally deserving of commendation with Part I., which has already been reviewed in *The Emu* (vol. i., p. 28-30). The half-tone photo-blocks of nests and bowers are really beautiful, while Mr. Neville Cayley's black and white drawings and natural poses of birds are admirable.

Perusal of the part under review makes more emphatic the previously expressed opinion that the author does himself an injustice by his title. Descriptions of nests and eggs form but a moiety of his work, which is really a praiseworthy endeavour to chronicle a full description of each species, where it is found, and how it lives. It is hence more valuable than a work dealing merely with nidification, and Mr. North virtually admits that his aim is wider than his title expresses by delineating (and rightly so) two species which have not yet been "found breeding," and the "nests and eggs" of which remain to be discovered—namely, the Golden (Newton) Bower-Bird and the Tooth-billed Bower-Bird.

It seems a thousand pities that such a splendid work should have any blemish—more still when it is realized that those most readily perceptible are caused by an oft-repeated fault of the author, for which it is hard to find any justification. Indeed, there is evidence in the present number that Mr. North recognizes that acknowledgment should be made of what has been recorded by prior or contemporary workers in the same field. In an innocent footnote on page 80 [*Zeitschr. f. ges. Orn.*, i., p. 92, pl. xvii., fig. 1 (1884), and *op. cit.*, p. 283, pl. xviii., figs. 2-4 (1884)] he draws attention to a work in a foreign language not available to the majority of Australian ornithologists, who have hence inadvertently overlooked the descriptions, &c., of one of the Orioles therein contained. Yet he himself has omitted an important reference on the subject of Bower-Birds in his own language, to wit the *Proceedings of the Royal Physical Society of Edinburgh*, vol. xiv., pp. 13-46 (1898), with eight photo. illustrations, four being similar subjects to those in his own book. Seeking a reason for this omission lands the reader in a dilemma as to whether the author has been negligent in failing to consult authorities, or has desired to avoid reference to

the work of a brother Australian naturalist, and in passing it by has slighted one of the most venerable and learned societies of Great Britain.

Again, in the chapter on the Great Bower-Bird, justice has been denied to another well-known worker. The original descriptions of eggs, &c., by Mr. Dudley Le Souëf, C.M.Z.S., which appeared in *The Ibis*, p. 359 (1899), and in the *Victorian Naturalist*, vol. xvi., p. 66 (1899) have been ignored. Mr. North has alluded to specimens of these eggs in the Ryan and Snowball collections only, though almost every collector is aware that Dr. Ryan, the late Dr. Snowball, and Mr. Le Souëf formed a syndicate of three to send Mr. E. Olive to the Northern Territory. He has also quoted at length Mr. Olive's field note pertaining to the Great Bower-Bird without acknowledging the fact that the information was procured whilst Mr. Olive was in the pay of the syndicate named. It would surely have been courteous to do so.

There is still another omission—and a very serious one—which cannot be overlooked. It is hard to understand why, whilst the other Cuckoo-Shrikes have been fully described in the present part, so well-defined a species as *G. lineatus* has not been included. The non-inclusion of this bird renders Mr. North's work incomplete, and discounts its value as a complete work of reference very greatly. The beautiful Barred Cuckoo-Shrike is certainly "found breeding in Australia," its habitat includes Mr. North's own state, and its nest and eggs have long since been discovered. They were described by Mr. Le Souëf in *The Ibis*, p. 314 (1896), and re-described in Mr. Campbell's book (*vide* p. 99), with an authenticated coloured figure of an egg on plate vii., while there is a photograph by Mr. Le Souëf in the *Victorian Naturalist* (vol. xiii., p. 63, 1896) of another type of egg.

Looking casually at Mr. North's technical matter, it will be noticed he states that the Satin Bower-Bird lays three eggs "occasionally," and that both the Spotted Bower-Bird and the Cat-Bird also lay three "sometimes." It would only be right to have given his authority or data, because he has stated in his previous work that these birds only lay two eggs to a clutch. Regarding the Spotted Bower-Bird and a "remarkably handsome set of two in Mr. Joseph Gabriel's collection," it would have been interesting had Mr. North furnished the history of these eggs, especially as he has deemed it of sufficient importance to figure one (pl. B ii., fig. 5). Again, touching the Spotted Bower-Bird (page 44), Mr. North says, as "was pointed out by me years ago, this bird is an excellent mimic." A footnote reference would have been confirmatory evidence that he had first pointed out this remarkable trait in the bird.

Mr. North has probably made an omission by leaving South Australia out of the "distribution" of the Oriole. At least one

reliable collector has observed the bird in that State.* And, strangely enough, while cleverly arguing that *O. affinis* of Northern Australia is merely a smaller form of *O. sagittatus* (*viridis*), and should be "lumped" with that species, he has omitted North-Western Australia and Northern Territory, in the proper place, from the "distribution."

In aiding ornithologists to unravel certain knotty points Mr. North's labours (with a national collection at his back) are exceedingly helpful. Writing, for instance, on the Oriole, he states:—

"In the 'Catalogue of Birds in the British Museum' Dr. Sharpe does not regard either *Oriolus affinis* or *Collyriocincla parvissima* as distinct species, although the learned author ranks several of our Australian birds as good species on less slender grounds. Authorities are divided in opinion as to what is a sufficient character to constitute a species or sub-species, and have been classed as either 'lumpers' or 'splitters.' Personally I favour the former, for in a large island-continent like Australia, where geographical distribution and climatic influence are such important factors in the character of a species, it would render the study of birds impossible if each tinge or shade in colour of plumage from different latitudes were accorded sub-specific distinction. During a period of 12 years I have characterized three very distinct sub-species, but were I to separate from different localities each race that varies from the average type in size and depth of colour, the described Australian forms would be considerably more than twice the number they are at present. To do so, however, ornithologists, without the aid of a specimen being properly localized, and of a large reference collection only to be found in a museum, and possibly a few private collections, would be hopelessly involved in trying to distinguish the various climatic forms of a species. Taking *Oriolus sagittatus* as an example, one would pick out three distinct races from the typical form. An examination of a large series from different latitudes would prove, however, that they gradually merge into one another. Leaving the increase in the length of bill out of the question, the decrease in the white terminal marking of the tail feathers is shown on the preceding page from a photograph of the tails of two fully adult males obtained in widely separated localities."

It will be noted with satisfaction that Mr. North is adopting many of the vernacular names mentioned in the Australasian Science Association's List (1898), but it is quite unnecessary to excuse himself for doing so in some cases because he found (like the committee who drew up the list) they had already been used by earlier authorities.

* * *

"THE Birds of My Parish," by the Rev. Evelyn H. Pollard (John Lane, the Bodley Head, London and New York, 1890), is by no means a new book, but is one that retains its freshness, and will repay every bird-lover's reading. It is also a good example of what is being done by modern writers to popularize natural history. Within a limit of 1,600 acres (a small holding in some parts of Australia) this disciple of Gilbert White has found material for a most interesting volume, recording the "doings and sayings" of the 76 birds observed and studied. These are

* "Nests and Eggs of Australian Birds" (Campbell), p. 82.

"roughly classed, first as residents, regular or irregular, of the particular parish; secondly as migrants to and from the country, summer and winter. Fifty-one of the total number of birds are placed in the first of these two categories, the remaining 25 in the second." There is much in the volume that recalls the close observation and admirable description of Richard Jefferies, the patient watching and the keen sympathy with the object observed; and though the terse directness of White's "Selborne" is missing, one feels that the author is master of his craft, and does not find a dull page. To pick a gem from this casket, the chapter entitled "A Medley" might be chosen, and yet it is hardly more readable than several others. "Birds at the Soup Kitchen" and "Summer Migrants" are almost equally good. If the author is occasionally too imaginative in the language he puts into the mouths of his birds, he always makes it reveal bird ways, and thus elicits "points" a casual observer might overlook. Those who wish some acquaintance with British bird life could hardly do better than peruse this book.

* * *

"STRANGE ADVENTURES IN DICKY-BIRD LAND."—A little book with this title, by the well-known writer, R. Kearton, F.Z.S., who, with his brother, has done so much to reproduce phases of bird-life photographically, shows a tendency of modern bird literature. The aim is to induce children to take an intelligent interest in wild life, and the author has endeavoured to do so by means of a series of short stories in which the heroes and heroines are birds and beasts. When these are read as illustrated by the admirable pictures (taken from life) it is hard to conceive of anything that could be more effective in the production of a love of natural history in the young. The incidents introduced being founded on facts which have come under the notice of the author, the work can be strongly recommended. It is published by Cassell and Co.

* * *

A NEW magazine, called *Animal Life*, is being published by Hutchinson and Co., London. "Zoo Notes," in the first number, include pictures of the King and Thick-billed Penguins, as well as other birds. A Nankeen Night-Heron from Australia is figured, and as a novelty in bird life a photo. is given of an Osprey, with the remark that, though once common in Britain, more particularly in the north, it now never lives long if brought there. A paper on "The Last Hampshire Ravens" is worth perusal, and from it one regrets to learn that "as an inland bird the Raven has been nearly exterminated." The illustrations are good examples of the high standard to which photo.-illustrations can be brought, and are of the more value as being taken direct from life.

Forgotten Feathers.

[From "Expedition into Central Australia" (Sturt, 1869),
vol i., p. 269.]

"THE morning we started to pay a visit to the blacks was more than usually oppressive even at daybreak, and about 9 it blew a hot wind from the north-east. As we rode across the stony plain lying between us and the hills the heated and parching blasts that came upon us were more than we could bear. We were in the centre of the plain when Mr. Browne drew my attention to a number of small black specks in the upper air. These spots, increasing momentarily in size, were evidently approaching us very rapidly. In an incredibly short time we were surrounded by several hundreds of the Common Kite, stooping down to within a few feet of us, and then turning away, after having eyed us steadily. Several approached us so closely that they threw themselves back to avoid contact, opening their beaks and spreading out their talons. The long flight of these birds, reaching from the ground into the heavens, put me strongly in mind of one of Martin's beautiful designs, in which he produces the effect of distance by a multitude of objects gradually vanishing from the view. Whatever the reader may think, these birds had a most formidable aspect, and were too numerous for us to have overpowered if they had really attacked us. That they came down to see what unusual object was wandering across the lonely deserts over which they soar, in the hope of prey, there can be no doubt; but seeing that we were likely to prove formidable antagonists they wheeled from us in extensive sweeps, and were soon lost to view in the lofty region from whence they had descended."

The "Common Kite" referred to is *Milvus affinis*, Gld.

It would be interesting to learn if Professor Spencer or Mr. Gillen, or other recent explorer, has observed the peculiar trait of this Kite mentioned by Sturt.—H. E. H.

About Members.

A SPECIALLY bound copy of the first volume of *The Emu* was forwarded to their Royal Highnesses the Prince and Princess of Wales, as co-Patrons of the Aust. O.U. The volume was accompanied by a "snap-shot" reminiscence (taken by a member of the Union) of Her Royal Highness at Fernshawe, Victoria.

Mr. D. Le Souëf has received the following acknowledgment from the Private Secretary of their Royal Highnesses:—"The Prince of Wales has received from His Excellency the Governor-General of Australia a copy of *The Emu*, which you have been good enough to forward for the acceptance of their Royal

Highnesses from the Council of the Australasian Ornithologists' Union. I am also directed to express to you the thanks of the Princess of Wales for the photograph taken on the occasion of Her Royal Highness's visit to Fernshaw."

On the afternoon of 15th July His Excellency Lord Tennyson and *suite* visited "Holmfirth," South Australia, the estate of Mr. J. F. Mellor, for the purpose of inspecting the birds, other pets, &c., of the family. Lord Tennyson expressed his keen appreciation of the way the native birds were cared for and protected. Mrs. Mellor's unique collection and Mr. J. W. Mellor's well-filled oological cabinets also came under His Excellency's observation, and the way he compared the eggs of certain Australian birds with those of the old country showed that His Excellency was quite conversant with European ornithology.

Sir Samuel Way was sworn in as Acting-Governor of South Australia on the 17th July.

A Tasmanian member (who wishes his name withheld) has subscribed £1 to the Coloured Figure Fund.

Mr. H. E. Hill, of the Field Naturalists' Club, Geelong, and Hon. Curator of the Museum in connection with the Gordon Technical College, has been appointed Assistant at the Guildford Grammar School, Western Australia. Mr. Hill has compiled some field observations, extending over many years, of the birds of the Geelong district, which will appear in *The Emu* in due course.

That Americans are wise in their generation has an additional proof in the fact that they afford facilities in some States to the young to study natural history, and have chosen an admirable means of imparting instruction. A letter was recently received by Mr. A. J. Campbell from Mr. F. M. Chapman, Associate Curator of the American Museum of Natural History, forwarding a request from Professor A. S. Bickmore, of the State Department of Public Instruction, for copies of a number of the original negatives used in his (Mr. Campbell's) work—"Nests and Eggs." These are required for the purpose of making "lantern slide illustrations to be used in connection with nature study in the State of New York."

Members will regret to learn of the death of Mr. Charles G. A. Winnecke, F.R.G.S., the well-known surveyor and explorer, who had charge of the Horn scientific expedition to Central Australia in 1894. He died in Adelaide on the 10th September last, at the young and useful age of 44. Mr. Winnecke took part and a keen interest in the first Congress of the Union, held in Adelaide last year.

Notices.

MEMBERS are informed that the proper shade of colouring for the cases of vol. i. of *The Emu* can now be had on application to Messrs. George Robertson and Co., Little Collins-street, Melbourne. Price, including binding, 2s. 6d.

The Hon. Treasurer begs to intimate that subscriptions for membership to the Aust. O.U. for the financial year 1902-3 are now due, and that subscriptions may be sent to his address—Robert Hall, Flinders Buildings, Flinders-street, Melbourne.

THE Second Congress of the Aust. O.U., to be held in Melbourne from the 19th to 22nd November, promises to be a great success.

According to the preliminary arrangements, besides general business and reading of interesting papers, there is to be an illustrated lecture on "The Islands of Bass Strait," at which His Excellency Sir George Clarke, K.C.M.G., F.R.S., will preside. Also a novelty in the shape of a "Mutton-Bird Dinner." After the more serious business of the Congress is finished, there will be a camp-out excursion, extending over a few days, to the Mutton-Bird rookeries on Phillip Island.

It is to be hoped that as many members as possible, when replying to the Hon. Secretary's circular, will signify their intention of being present at this Congress.

RECEIVED:—"Notes and Observations" and "Birds in the Launceston District," from Frank M. Littler; "List of Birds seen in Strathbogie," from H. Quiney; "Arrivals and Departures, 1901-2," from G. Graham, Scott's Creek (Vic.); "Migration Notes of Some North Queensland Birds," from F. L. Berney; "Field Notes," from J. Neil M'Gilp, Clare (S.A.)



Nest of the Rose-breasted Robin (*Petrarca rosea*), showing egg of Square-tailed Cuckoo (*Cacomantis variolosus*), in a musk-tree (*Aster argophyllus*), with the epiphytal orchid (*Sarcochilus parviflorus*).

FROM A PHOTO. BY A. J. CAMPBELL

The Emu

Official Organ of the Australasian Ornithologists' Union.

"Birds of a feather."

VOL. II.]

1ST JANUARY, 1903.

[PART 3.]

Australasian Ornithologists' Union.

MELBOURNE CONGRESS.

THE 1902 annual gathering of the Union (its second) was held in Melbourne, the proceedings opening on 19th November with a "Mutton-Bird dinner" at Miss Kisson's tea-rooms, Collins-street. The well-served *menu* had for its leading item Short-tailed Petrels (*Puffinus tenuirostris*) cooked in three different ways. The reunion was in every respect a success.*

After the dinner, Mr. A. H. C. Zietz, F.L.S. (South Australia), one of the vice-presidents, took the chair. The minutes of the Adelaide Congress were duly confirmed, on the motion of Mr. F. R. Godfrey, seconded by Mr. G. E. Shepherd, and supported by Messrs. A. Coles and A. J. Campbell, who alluded to the necessity of reserves being proclaimed in the various States in which native birds might breed. The hon. secretary read a brief report of the work done by the Council of the Union during the year, enumerating, amongst other items, the amendment of the schedule under the *Game Act* in Victoria, so as to afford further protection to the bird life of that State; the endeavour to secure better protection for the Cape Barren Goose; and an effort which was being made to have one of the islands of the Family Group off the coast of North Queensland proclaimed a reserve as a breeding place for the Nutmeg Pigeon. The report having been received, the names of new members since the previous congress were submitted and approved. The hon. treasurer (Mr. Robert Hall) then read the balance-sheet, which showed, after deducting amounts paid in advance by members, the payment of some £60 for the printing of *The Emu*, and a further sum for incidental expenses, a credit balance

*Those present were—Mrs. J. S. Hutchinson, Miss A. F. M'Haffie, Messrs. E. L. Barrett, A. Cole, A. J. Campbell, T. G. Campbell, F. R. Godfrey, R. Hall, H. Kendall, D. Le Souëf, C.M.Z.S., S. Le Souëf, F. W. Littler, C. F. Ladwig, E. H. Lane, A. Mattingley, J. W. Mellor, Morton, D. Macdonald, G. E. Shepherd, A. Zietz, C.M.Z.S., R. Zietz.

of about £22. On the motion of Mr. F. R. Godfréy, seconded by Mr. A. Coles (who said that he had been connected with a good many scientific bodies, but never before with a young one which held so favourable a financial position), the retiring office-bearers were unanimously re-elected. Mr. Zietz, in submitting the motion, congratulated the Union on the work already done, and pointed out that it still had a good field for further efforts. The hon. secretary returned thanks.

Mr. J. W. Mellor (South Australia), in a congratulatory speech, proposed that the next annual Congress be held in Hobart, on a date to be arranged by the Council.

Mr. F. M. Littler (Tasmania) seconded the motion. Though Tasmanian members were few in numbers, they would make up for that in the warmth of their welcome to visiting members. Tasmania possessed a characteristic fauna which was worthy of study.

Mr. F. R. Godfrey brought under notice the desirability of directing the attention of young people to the idea of the protection of birds. When in Parliament he had induced the then Minister of Education to allow him to prepare a list of insectivorous birds, which, accompanied by notes and plates, was to be used in schools. He did not know whether the lists were still in existence. Teachers might be induced to give lessons on such subjects. In countries where bird life had been destroyed, a great deal of suffering from insect pests had been the result. He thought also that they might well ask the assistance of lady friends in this matter.

Mr. A. Coles replied that the Government of Victoria had already taken action. A list prepared by Mr. R. Hall and himself was in the press. It contained 101 coloured plates and would be issued to schools.

Mr. R. Hall said the paper shortly to be published was on the basis of Mr. Godfrey's list. He had had the opportunity of addressing 500 teachers in the course of lectures on "Nature Studies," and had put the matter before them. He was also preparing a book which would deal with the subject. Other States might be approached and asked to fall into line with the movement.

Mr. D. Le Souëf mentioned that good work in this direction was being done by articles and plates in the "School Papers," which reached not only scholars, but the majority of houses in the State. He was sure articles on natural history would be welcomed for inclusion in these papers.

Letters of apology for absence having been read from Dr. Ryan, Captain A. White (S.A.), and Colonel Legge (the president), and the hon. secretary having said that many other members had communicated with him regretting inability to attend, Messrs. A. H. C. Zietz and Littler returned thanks on behalf of visitors. With the usual vote of thanks to the chair-

man, the meeting closed. During the evening two flashlights were taken by Mr. T. G. Campbell, the second of which, when members were in less formal mood than during the dinner, was shown as an introductory picture at the lecture on the following evening.

SECOND DAY.

A most enjoyable afternoon was spent by visiting and several local members at the Zoological Gardens, whither they proceeded on the invitation of the Council of the Zoological and Acclimatization Society. After the many objects of interest in the Gardens had been pointed out by Mr. D. Le Souëf, who took the greatest pains to let members see all worth seeing and to afford information, the party were cordially entertained by Mr. and Mrs. Le Souëf.

On Thursday evening the Athenæum was well filled on the occasion of a series of three lecturettes, "The Islands of Bass Strait," being delivered. His Excellency Sir Geo. Sydenham Clarke, F.R.S., took the chair, and introduced the lecturers. An admirable series of over 100 lantern slides had been prepared for the occasion. Mr. A. J. Campbell (who was first lecturer) dealt principally with a trip taken to King Island by members of the Field Naturalists' Club, and illustrated his remarks by maps of the Strait and photos of many interesting scenes and incidents.

Mr. Le Souëf showed pictures of Kent Group, and gave some valuable details of bird and other life thereon.

The third section of the lecture was to have been delivered by Mr. J. F. Bradly, but owing to his indisposition, Mr. F. R. Godfrey kindly read his paper on the Furneaux Group of Islands for him. The peculiar population, descendants of aborigines, whalers, sealers, and other adventurers of the early days, was described as an almost primitive, guileless, and decidedly indolent people, living mainly on the annual harvest of Mutton-Birds. It is a community which has apparently fallen as far behind the times as the mutineers of the *Bounty* on Pitcairn Island, though physically it is a fine race, as the group photos. of islanders proved. [In commenting on the lectures *The Argus* says:—"The splendid series of photographs which illustrated these lecturettes were unique. Some of them, showing the strange sea bird rookeries, have been described in England as the finest bird photographs ever taken."]

For the photographs Messrs. Ashworth, Campbell, Le Souëf, and Wood were responsible.

Sir Malcolm M'Eacharn having, at the end of the lectures, proposed a vote of thanks to His Excellency the Governor for presiding, which was carried by acclamation, Sir George S. Clarke said the evening had been an intellectual treat. The charm of these excursions was so obvious that they made one wish to discard starched shirts and all such formalities, and

personally he would like to take part in one. Mr. Le Souëf and Mr. Campbell, he said, ranked with Gould and Gilbert in their studies of the birds of Australia, and he hoped the Union would continue its exertions to save some of the rarer species from extinction. It should certainly advertise its work more. One of the interesting features of Australia was decidedly its bird life, and he thought that many country clergymen might, like White, of Selborne, be easily induced to become correspondents of the Union, and give their experiences of the habits of birds. If the Union could also induce the ladies to cease wearing bird plumage in their costumes, it would help to preserve bird life—one of the greatest charms in nature.

THIRD DAY.

On Friday, 21st November, several of the members visited the National Museum, where, owing to the kindness of Professor Spencer, they were afforded opportunities of seeing many specimens not available to the public, as well as the fine collection which that institution possesses. In the evening, the meeting was held in the Royal Society's Hall, Mr. A. H. C. Zietz being in the chair.

PRESIDENT'S ADDRESS.

Colonel Legge, R.A., F.Z.S., the president, being unable to be present, sent (in addition to the apology which Mr. A. J. Campbell had read at the dinner) the following telegram:—

“Brighton Junction Railway, Tas., 21 11 02.

“A. Campbell, Customs, Melbourne.

“Wish congress every success. Regret my absence much.

“LEGGE, Hobart.”

His address was as follows:—

FELLOW-MEMBERS OF THE AUST. O.U.—

My apology for the shortness of this address must be that, until I was about to proceed on leave of absence for a few weeks to the mainland, I was not aware that the Union had again done me the honour of electing me as its president for the second year of its existence. I must tender my warm thanks for this graceful tribute of esteem, and I hope I may take it that it is indicative of your opinion that I have the true interests of our Union at heart. I may assure you that such is the case, and that I earnestly hope that it may flourish, and permanently abide as an educational influence for the good of biological science in Australia. Following on the lines of my opening address last year, it may be permitted to me to remark that the true course in front of the Union is that which should lead it to conduct its work—as given to the world in *The Emu*—on broad and expansive lines, devoting the pages of the journal to thoroughly scientific and instructive matter, which will advance our knowledge of Australasian and Austro-Malayan

ornithology, and that we should extend our sphere of labour beyond the "region" contained in the Commonwealth, and deal as much as we are able with the "sub-regions" of Malaysia and Oceanica. The wider the area over which our observations and work extend, the more influential our journal will be, and the higher the stand that it will take in the biological world of Europe and America, in both of which we may hope to find support and patronage for our journal, *The Emu*.

It is very satisfactory to find that eminent ornithologists in England have already, in the first year of its existence, spoken favourably of the journal, which is the flag under which the Union must always sail; and our thanks are due to the editors, whose painstaking work in bringing out the journal has in no small measure contributed to the satisfactory status of *The Emu*.

There is a magnificent field open to workers (both field naturalists and students) in the Aust. O.U. What is now desirable is a more extended knowledge of the birds of the inaccessible regions in the central, northern, and north-western districts of Australia. Collectors should be encouraged to explore these regions, and carefully compiled lists, accompanied by field notes of the collectors, should appear in our journal for the guidance of avifaunistic workers. These will keep alive the interest taken by naturalists abroad in the ornithology of Australia, and will help to complete our knowledge of "geographical distribution" within the confines of our "region." These are points as regards the advancement of our knowledge which cannot be kept too clearly in view, and in this connection it is very gratifying to note the appearance already, in the first volume of *The Emu* and succeeding parts, of such important papers as Mr. Hall's review of the collections made in N. W. Australia by that energetic worker, Mr. J. P. Rogers. The papers in question are on the lines of those in vogue ever since *The Ibis* was started, and of the immense value of which I, as an author, can speak most warmly.

It appears to me that one cannot do better in a short address than to take a cursory glance at the progress made in the pages of our journal (since its commencement last year) towards the advancement of ornithological knowledge in Australia. In so doing it will perhaps be best to notice the labours of each of the principal contributors in detail, as this course will give a clearer idea of the work done by them than by dealing with each part consecutively, and will avoid repetition in alluding to the authors of papers.

The chief contributors, from an educational and scientific point of view, have been Messrs A. J. Campbell, A. G. Campbell, D. Le Souëf, R. Hall, Tom Carter, C. M. Lyons, A. M. Milligan, and Professor Hutton, F.R.S. The articles those gentlemen have contributed show that our journal promises to

take the place in Australia which the parent journal, *The Ibis*, has for so many years held in England and Europe.

Mr. A. J. Campbell has found time, in addition to his labour as co-editor, to do his share. In Part 1 is an interesting notice of an historical character, dealing with the inception of the Union, and detailing the preliminary steps leading up to its foundation. Contained in it is a valuable photo.-reproduction of the signatures of the members who met and appointed the Provisional Committee, and who may be styled the founders of the Union. At this meeting I regret I was unable to be present. In reference to this plate we may congratulate ourselves that up-to-date methods in connection with journalistic illustration have enabled the editors to give to the world a memento which would not have been possible when *The Ibis* was started, in the "fifties" of the last century, as the organ of the B.O.U. In Part 2 Mr. Campbell gives notes on the beautiful Australian genus *Malurus*, which add to our information of it. Some members of this genus of "Wrens" grade closely to one another in the intensity of their colouration, and it is to be hoped that Mr. Campbell's new species, *M. whitei*, intermediate between *M. melanotus* and *M. callainus*, will stand the light of future examination, when more specimens are to hand.

A more interesting novelty, perhaps, is given by the same writer in Vol. II., Part 2 (the best effort of our Union, so far) in the shape of a new Flycatcher of the genus *Micræca*. The Australian members of this genus have hitherto been restricted to four species, and the new bird, *M. brunneicauda* (Brown-tailed Flycatcher), besides adding to this small number, forms one of the many additions to our avifauna which the far-off Northern Territory is bound in time to yield us.

From the pen of Mr. D. Le Souëf we have two articles on the "Protective Colouration of Australian Birds and their Nests," containing matter of much interest, and instancing numerous species in which either this remarkable colouration exists as a protective feature in their economy, or which exhibit the protective instinct in the architecture of their nests. It seems likely that Mr. Le Souëf's observations are quite new as applied to a good many of the species in question. As the writer says, "this is always an interesting subject." It may also, however, be extended to the colouration of eggs as a sort of protective *instinct*. Various members of the orders *Limicolæ* and *Gaviæ* (shore birds and sea birds), which lay eggs on the ground in open or exposed situations, appear to possess the astonishing power of modifying the colour and markings of their eggs so as to resemble exactly the ground, *débris*, and vegetation adjacent to their nests. I have called attention to this phenomenon as regards the Plovers in a short paper in Part 3, Vol. I. It may be observed in the eggs and nests, or nesting-cavities, of the Gulls

and Dottrels. In dealing with the Passerine forms, in particular, Mr. Le Souëf affords interesting details as regards the resemblance of their nests to their environment, which reveal a very remarkable instinct in these birds. Excellent illustrations, by means of photography, enhance the value of these articles, as indeed they do in so many of the contributions to our journal. It may perhaps be said that photographic art has never been put to a more interesting and educational use than in *The Emu*.

In Part 2, Vol. II., the writer in question has a valuable paper on "Birds'-eggs from Port Darwin District," which not only adds to our knowledge of "geographical distribution," but is also interesting from an oological point of view. The collection of nests it has been my privilege to see, and they are so fully described in the paper that it will always remain in evidence as a most instructive contribution to those who are working at oology. The egg and nest of *Micræca brunneicauda* are described, and ought in the near future to form the subject, with the bird, of a coloured plate by Keulemans. A beautiful photo. by the author illustrates the nest and eggs of the Chestnut-backed Quail.

Mention must also be made of Mr. Le Souëf's note on "Emu Feathers," a title, by the way, not commensurate with the value of the paper, which might be styled "Immature Plumage of the Emu." The collection in the Zoological Gardens affords contributor the much opportunity for valuable observations on immature plumages. The note in question deals with the barring of the feathers in young birds, and its disappearance in the following year—a common feature where barred plumage is concerned. This change is apparently a variable one in the Emu, as the barring is said sometimes to reappear after subsequent moults, showing a persistency as regards this character. It is much to be regretted that the Emu was not preserved in the early days in Tasmania. I can remember in the forties that a pair was kept on the estate of Tullochgorum, near Fingal, which must have belonged to the island race, which was, no doubt, a sub-species of the Australian form. The discovery of bones on the Strait islands shows that originally, when the Strait did not exist, the southern part of the continent was probably inhabited by one species, which, after the separation of land happened, became in Tasmania a sub-species, evolved under altered climatic and food conditions.

Geographical distribution of species has been well dealt with by several writers. The first valuable article, adding to our knowledge of this subject, is from the pen of Mr. Hall, and has been already briefly referred to. As in the case of Mr. Le Souëf's paper, the far north is dealt with, and Mr. Hall's review of Mr. Rogers's collection is done on lines which will make it extremely valuable to the cabinet naturalist, and interesting, in

the way the field notes are incorporated, to the student of bird life. Descriptions are given of the series of examples of each species, and the dates of the specimens are recorded—an always important point. Thirteen new species to this sub-region are recorded—one, *Helodromas ochropus* (the Green Sandpiper), being new to Australia. Any new member of the *Limicolæ* is sure to be recorded from this interesting district, as the wild, unfrequented, and vast coast line of N.W. Australia, which is in the track of migratory Waders from Asia, must always be the great habitat of "shore birds." As time goes on, and more accurate observations can be made, immature migratory species, as in some parts of southern Asia, will be found to be occasionally resident. Among these the Curlew Stint and the Little Stint (*L. ruficollis*) will doubtless find a place. If I mistake not, our enthusiastic member, Mr. T. Carter, has found the latter bird in the Point Cloates district in the winter. Fourteen species of *Limicolæ* are noticed in Mr. Hall's instructive article.

Very interesting notes from a field naturalist's point of view, at the same time adding to our knowledge of "distribution," have also been contributed in several articles by Mr. Carter. N.W. Australia may be said to furnish the most valuable field for ornithological research in our "region." The vast interior is but very partially explored, and still offers many novelties for the collector, among which will no doubt be some species of desert-loving forms, such as *Mirafr*a and *Eremiornis*, or their allies. Again, its enormous coast line, as already observed, is the habitat of numerous shore birds, the acquisition of which is such a passion with many collectors. Mr. Carter's notes are rich with interesting observations on both the abovementioned groups, as also many Passerine birds of western distribution, Raptores, and *Gaviæ*. Indeed, his so-styled "North-Western Notes," in Vol. I., and his "Exploration of North-West Cape," in Vol. II., show that N. W. Australia should, when properly worked, be a land of promise for the collector. The discovery by Mr. Carter of such a form as the new genus *Eremiornis*, which is closely allied to the Asiatic *Schanicola*, is an interesting example of affinity with such genera of the northern hemisphere. The Osprey, which is rare in southern latitudes, appears to be tolerably common on the shores of this vast region. The shy Wader noticed by Mr. Carter was doubtless the Greenshank. A *desideratum* as regards our progress in ornithology is a good collection of *Limicolæ*, carefully sexed, aged, and dated, in the Perth Museum. Should this be accomplished it will form the collection for reference as regards this "order" in Australia.

While on the subject of the far west it is right to notice the good work done by Mr. Milligan. He was fortunate enough to discover, in October, 1902, a new species of that interesting form the Bristle-Bird (*Sphenura*). This is another instance of

representation in the West of eastern types on a smaller scale, which was first demonstrated in Gould's writings or discoveries. Mr. Milligan is to be congratulated on his discovery, and being able to supply a new species for the pages of *The Emu*. A notable paper is contributed by him in the last number of the journal, and is the outcome of two expeditions to the south-eastern district of the State. From there fifty species are noted, among which are several—*Strepera plumbea*, *Stipiturus malachurus*, *Psophodes nigrogularis*, and *Lipoa ocellata*—concerning which interesting details as to their habits and economy are furnished. Mr. Milligan, being an enthusiastic field naturalist, has a grand future before him, and it is to be hoped he will be able to supplement in the far north-west the good work done by Messrs. Carter, Rogers, and others.

We come now to a useful paper from the pen of Mr. A. G. Campbell, who is following well in his father's footsteps. This communication is on the lines of those that have been so much in vogue in *The Ibis*, being, in fact, similar to papers I have already noticed, which have given lists of birds from localities, with notes on their habits and economy. Mr. Campbell's list will be useful to Victorian naturalists who may be engaged on the distribution of species in their State. The district in question is rich in birds, as above 150 species are recorded from a comparatively small area, including 11 members of the Raptores. As regards the internal migration of *Petræa phœnicia*, this is a matter which requires further investigation, and observations should be made by field naturalists on the north coast of Tasmania and the extreme south of Victoria to ascertain whether there is an annual movement south from the highlands of Victoria to Tasmania in the summer, and *vice versâ* in the winter. It does not appear certain as yet that this Robin quits Tasmania entirely in the winter, though the summer season is undoubtedly the time when it is in evidence as a visitant, and, of course, a breeder. It has also to be satisfactorily determined whether or not the species is resident in the southern parts of the New South Wales highlands, from which it migrates to the south in the summer. The observations of Mr. Campbell, extending over three years, are important in showing that he did not observe it in northern Victoria in the summer.

There is nothing that will lead more to a thorough recognition of the organ of our Union throughout the ornithological world than the enlistment into our ranks of distinguished men from abroad who are willing to contribute to the pages of *The Emu*. Hence it is very gratifying to find that the first part of the new volume opens with a valuable and interesting article from the pen of Professor Hutton. He has chosen for his subject the typical ocean-form south of the equator—the Penguin—and has discussed the affinities, evolution, and

primary migrations of these remarkable birds in such a manner as to throw a most interesting light on their history. In contributing this paper Professor Hutton has rendered an important service to the Union and its organ, *The Emu*.

Concerning an interesting district from the far north of South Australia, Mr. C. M. Lyons contributes a good paper on distribution, with field notes. The Lake Eyre country must always be an interesting ornithological region. Its vast size, and the fresh-water rivers running into it, make it a likely habitat for water birds and Waders, as well as the rendezvous about isolated water-holes of numerous species of other "orders." Fifty-three species were identified, and others seen that Mr. Lyons could not make sure of. The young plumage of *Erythronys cinctus* is described in the article by Mr. D. Le Souëf.

Various other papers, mostly short, furnish the field notes of observers and bird-lovers, and these, in most instances, add to the local information previously possessed. In order, however, to keep up the scientific standard of our journal, it is necessary, I must here mention, for the editors to carefully supervise these contributions. In one there are mistakes in classification which have been accidentally overlooked.

In Mrs. Parker's charmingly written article one gets an insight of the delightful tameness and fascinating trust which members of the feathered creation develop when unmolested and shown kindness by their—nearly always—natural enemy, man.

In concluding this short notice of what has been done in our journal towards advancement of ornithology in Australia, I would fain express the hope that members of the Union will confine as much as possible their descriptions of new species to the pages of *The Emu*. There is often a tendency, as is seen in England, to resort to monthly publications, so as to secure priority of description. I have always lamented this circumstance, as owing to it the pages of *The Ibis* have often been deprived of descriptions of new species. Let us endeavour to bring our journal to the front in the direction indicated. It is to be hoped that ere long funds will be available for coloured plates of new species and undescribed eggs. The photographic illustrations are all that could be desired, excellent in effect and beautifully done; but it is the hand-coloured plate or the carefully produced "chromo" which sets the journal off, and commends it to the public. In this respect what have not Wolf and Keulemans done for *The Ibis*? I hope to live to see the work of the latter artist embellishing our journal, and so soon as our editors accomplish this it will be a handsome feather in their caps!

Mr. A. J. Campbell moved that a hearty vote of thanks be accorded to Col. Legge for his interesting address. This was seconded by Mr. Mellor, and carried unanimously.

Mr. Campbell then handed to members an elaborate tabulated

statement, showing the close seasons of protected birds under the *Game Acts* of the various States, and read a paper advocating the bringing of all such matters into line, also suggesting that each State should secure legislative authority to proclaim reserves wherein birds might breed unmolested.

Mr. J. W. Mellor thought the matter needed consideration. In South Australia much was done, and it was annoying to see birds which had been cared for pass away to be shot by neighbours. An Act was needed for the protection of birds which would cover all Australia. Being a prime mover in drawing up the South Australian list of protected birds, he could speak with feeling. He had included the names of many more birds than appeared in the list, but had to withdraw them, owing to opposition from sportsmen and others. A committee should be appointed, representative of each State, to draw up a schedule for submission to the Parliaments. The longer the delay the less opportunity for doing good work.

Mr. D. Le Souëf thought Mr. Campbell ought to be thanked for the great trouble he had taken. If the whole of Southern Australia could be brought under one Act it would be a great help. He thought the matter might be carried out by the Council, which embraced representatives of all the States.

Mr. A. H. C. Zietz thought the Council could work the whole thing out; but it must be borne in mind that the breeding seasons were not the same for the whole of Australia.

On the motion of Mr. Le Souëf, the Council were requested to take the matter up, and to get a representative from Tasmania to act with them.

In some brief notes, "On Lighthouses as Observing Stations," Mr. Le Souëf suggested that papers be sent to the various lighthouses, which the keepers could fill up with a list of birds noted and other particulars.

The Chairman thought the difficulty of getting replies would be great, and mentioned some experiences of his own in similar matters. He would suggest that if the papers could be issued through the Marine Boards the request for information would carry more weight.

The Council were authorized to take the necessary action.

Mr. Le Souëf then read some notes, illustrated by specimens of feathers, to prove that birds do not necessarily moult when changing the colour of their plumage. There was a short and appreciative discussion on the subject, in which Mr. Mattingley expressed the opinion that Mr. Le Souëf's theory clashed with the idea of protective colouration.

Mr. Robert Hall sent in a short paper on "The Reversion of Colour in Kingfishers' Eggs," and in the discussion which followed the opinion was expressed that the author had hardly proved the premises on which his theory was based.

Mr. F. M. Littler having read portion of a long and interesting

paper on some Tasmanian birds which had come under his own notice, and having been highly commended for the keen observation he had shown in gathering his field notes, a vote of thanks was accorded to the chairman, who declared the Congress closed.

THE CAMP-OUT.

The camp-out excursion of the members and friends of the Aust. O.U. to the Mutton-Bird rookeries on Phillip Island, Western Port, was an unqualified success, and passed off without a hitch of any kind. It was originally intended to have two camping parties—one near Cape Wollomai* and the other at The Narrows, on the Back Beach, about 4 miles to the east of the Cape, but it was decided at the last moment to amalgamate the two camps and pitch at the latter locality—an arrangement that proved entirely satisfactory.

The following 31 persons (the majority remaining the whole week, while the others came for a day or so) took part in the encampment, namely :— Mesdames Coghill, Campbell, Thomson, Relph; Misses Campbell (3), M'Haffie, O'Rorke; Dr. T. P. M'Inerney; Messrs. A. J. and T. C. Campbell, A. J. Relph, Mattingley (2), Ladwig, Neuendorff, F. Littler (Tasmania), D. Le Souëf, Robt. Hall, C. Coles, W. Coles, R. E. Trebillcock, C. E. Lane, J. W. Mellor (South Australia), Scott, G. E. Shepherd, S. P. Townsend, D. MacDonald (special correspondent *The Argus*); Masters Le Souëf, Campbell. Visitors—Mr. and Mrs. W. C. MacLean.

On Saturday, 22nd November, about half the party, including the ladies, proceeded to the scene of the camp overland. The rest, with the heavier baggage, were conveyed in the Government steamer *Albert*, through the courtesy of the Hon. the Minister of Public Works, on the recommendation of Mr. W. C. MacLean, of the Ports and Harbours Department. Conveyances were in readiness at Cowes and Newhaven to carry the passengers to the camping site, which was about 6 and 4 miles respectively from the landing places. All were safely under canvas at dark.

The camp (8 tents) was splendidly situated, sheltered by tea-tree, 'neath a banksian grove, with a well of sweet water in the midst, and a rookery of Mutton-Birds in the sand-dunes at the rear—a veritable ornithologists' paradise (see illustration). The primary object of the excursion was to visit the various Mutton-Bird rookeries at egg time, but, in addition to this, members indulged in fishing, shooting, sketching, photographing, entomological and marine collecting, &c.

The sandy rises, riddled with rabbit-like burrows, mostly containing birds, behind the camp were the chief centre of

* Miss Anna F. M'Haffie writes :—"The name is pronounced *Wool-am-i*—at least, my father always gave it that pronunciation, and said it meant Cape Woodlands, or Woody Point. I suppose he took it originally from the blacks. None of the Western Port tribe lived on the island in my father's time (the 'forties'), the headquarters being about the Bass River."



Ornithologists' Camp, at "The Narrows," Phillip Island. Sand-dunes, with Mutton-Bird Rookery, at the rear.

FROM A PHOTO. BY A. J. CAMPBELL.

attraction. At dusk every evening a move was generally made for points of vantage to watch the incoming birds which darted here and there with arrow-like flight everywhere in the immediate neighbourhood. It was almost dark when the bulk of the birds had pitched and were in their burrows, or were flopping clumsily over the ground through the short scrub, uttering all sorts of indescribable noises—squealing, grunting, cooing, &c. This bird pandemonium continued all the live-long night, ceasing suddenly about dawn, or just before the last outgoing birds depart to sea. It was noticed by certain aerial voices that some of the birds (probably old bachelors, or those who had lost their mates) were on the wing over the rookery all night. So great were the nocturnal noises near one of the tents (occupied by ladies) that at one time it was deemed necessary to remove the tent to a quieter quarter, in order that the occupants might have some sleep.

The amusement of egging was carried on during the day, chiefly to supply the larder. Mutton-Birds' eggs fried are a great delicacy, and were enjoyed by all in camp. But to gather these eggs, hidden singly in burrows 4 feet to 6 feet in length, was no easy matter. The burrow has first to be probed with a crook (usually a tea-tree stick with a hook of fencing wire at one end) to ascertain if the bird be within. If so, then the crook has to be dexterously handled to withdraw the egg, which, of course, is invisible till it is drawn to the mouth of the hole.

One warm afternoon a party of 10 (including 3 ladies) started to spend a night on the great rookery on Cape Wollomai, distant about 6 miles. Swags, consisting of wraps, "tucker," &c., were divided, and a very pleasant walk along the Newhaven road, and thence across country by way of Red Point, where the billy and water bag were filled with pure spring water, brought the party to the tussock-covered summit (330 feet above the sea) of the Cape about 7 p.m. After a delightful repast, including Russian tea (a squeeze of lemon instead of milk), and the sun had dipped in amber-coloured splendour into the ocean (betokening a mild night and heat on the coming morrow), positions were taken up on the western plateau of the Cape. After dark were witnessed all the scenes of the home-camp rookery at The Narrows, only on a larger scale. The party having returned through the darkness to their traps, about 10 o'clock, the camp-fire was stirred up, and members retired for a nap, stretched on the hard earth among the tussock grass. How many snakes lurked near nobody knew or cared, for 'twas folly to be wise, &c. By half-past 2 o'clock some of the company were afield. And such a fresh and invigorating morn it was—the spring of day at hand, seen over the loom of the mainland, just flushing the eastern sky, still starlit, with the crescent of a fast-waning moon in the centre—a lovely sight! Birds were

already on the move seaward. The east of the Cape cap, where most of the observers took up their positions, seemed to be a favourite departing place of the dusky-plumed creatures, which ran about like rats, and congregated silently on the edge of the cliff, some throwing themselves over, and gently gliding away into the gloom; others, spreading their wings and catching the land breeze, sprang off tip-toe, sailed inland a bit, and, wheeling, followed their mates out of sight to sea. By 4 o'clock not a bird remained except the brooding ones underground. Breakfast was served on the Cape at sunrise, a basketful of eggs gathered, and at 7 o'clock "tracks" were made *viâ* the Back Beach for the main camp, which was reached in due course about 10 o'clock. On a detached rock at the most westerly promontory of the Cape there was noticed a small rookery of Silvery Gulls, with a solitary Crested Tern nesting in the midst.

The visit to The Nobbies, at the west end of Phillip Island, was another "red letter" day in the history of this camp. Twenty members, or nearly the whole camp, "rolled up" to this outing, and were conveyed there about 13 or 14 miles, in three vehicles. The Nobbies take their name from two little knolls of rock (the summit of the higher being nearly 100 feet from sea level), which are islands at high water. They are more or less covered with trailing, soft, succulent ice plant, verdant in colour, and contrasting with beautiful pig-face weed, the leaves of which, as well as flowers, being ablush with pink, transformed some of the rocky declivities into perfect gardens. In the shallow crevices of rock protected by this herbage, numerous curious little Penguins had their nests, some sitting upon a pair of eggs, others on dark downy chicks (see illustration). Some members with binoculars, while watching the gambols of seals on the outlying rocks, discovered what appeared to be a rookery of black and white Cormorants, which were, however, too distant for identification as to species. After luncheon, dispensed on the crown of Point Grant, some of the company strolled along the strand of Cat Bay, while others visited the two Mutton-Bird rookeries known as Flynn's and M'Haffie's, on the inner beach, and all met on the road home at "Inishowen," near Cowes, to enjoy afternoon tea at the kind invitation of Mr. W. Harbinson. Finally, the home-camp was reached safely, about 7 p.m., as the dinner-gong (the bottom of a high-sounding fryingpan) was clanging.

At the last dinner Mr. A. J. Campbell took occasion to propose a special vote of thanks to Mr. A. Mattingley for the manner he had looked after the creature comforts of the camp by providing such a first-class cook, &c.—carried amidst great acclamation. Mr. Robert Hall moved a vote of thanks to the promoters of the excursion, which had given such unbounded satisfaction. Mr. J. W. Mellor, on behalf of the two inter-State



Little Penguin (*Eudyptula minor (indina)*) in Nest, with Young.
FROM A PHOTO BY T. G. CAMPBELL.

visitors, in supporting the motion, said the camp had been a revelation and genuine surprise to them.

On the eighth day (Saturday, 29th November) the most delightful of delightful camps—the weather had been all that could be desired the whole time—was struck. Ten members returned to town overland, a similar number going round by the *Albert*, which was waiting at the Cowes jetty.

The report and recommendations of the visits to the various Mutton-Bird rookeries, all of which were inspected, will form the subject of a separate article later.

Descriptions of Birds' eggs from the Port Darwin District, Northern Australia.

BY D. LE SOUËF, C.M.Z.S., &c., MELBOURNE.

PART II.

UROAËTUS AUDAX (Wedge-tailed Eagle).

Cat. B. Brit. Mus., vol. i., p. 231; Gould's Handbook, vol. i. p. 8, sp. 1.

Only one egg of this bird was found, in a large stick nest, built in a eucalyptus tree; it is marked all over with light-coloured blotches of a purplish hue, is lustreless, and measures 2.75 x 2.28 inches. Date, 25th January.

ASTUR APPROXIMANS (Australian Goshawk).

Cat. B. Brit. Mus., vol. i., p. 126; Gould's Handbook, vol. i., p. 41, sp. 17.

This bird was found nesting on 28th September, and its three fresh eggs secured after a difficult climb. Two of them are bluish-white, without any markings, but the third specimen has a few brown, irregular blotches distributed over it, especially on the smaller end. The eggs are without gloss, and measure—A, 2.03 x 1.36; B, 1.87 x 1.48; C, 1.84 x 1.46 inches.

NISAËTUS MORPHNOIDES (Little Eagle).

Cat. B. Brit. Mus., vol. i., p. 254; Gould's Handbook, vol. i., p. 11, sp. 2.

Nine nests of these Eagles were found, on the following dates:—14th (2), 19th, and 25th May; 1st (2), 3rd, 6th, and 9th June; and in each case there was only one egg in the nest, showing that they more often lay one than two. The eggs have no gloss, and are dull white in colour, two of them having a few markings of light reddish-brown spots; in three a few light buff longitudinal markings are present; while the rest are plain dirty white. All are more or less stained by the parent bird when being laid, as is common with most Hawks' eggs. They measure—A, 2.20 x 1.70; B, 2.22 x 1.80; C, 2.36 x 1.72; D, 2.24 x 1.71; E, 2.25 x 1.70; F, 2.26 x 1.76; G, 2.35 x 1.74; H, 2.21 x 1.72; I, 2.21 x 1.70 inches.

HALIAETUS LEUCOGASTER (White-bellied Sea-Eagle).

Cat. B. Brit. Mus., vol. i., p. 307; Gould's Handbook, vol. i., p. 13,
sp. 3.

17th June was the date on which the stick nest of this bird was found; it contained two eggs, dull white in colour, slightly glossed, and coarse in texture. The nest was a very large one, situated on a good-sized eucalyptus tree, and not far from the coast line. The eggs measure—A, 2.80 x 2; B, 2.82 x 2.02 inches.

HALIASTUR INDUS, sub-species **GIRRENERA** (White-headed Sea-Eagle).

Cat. B. Brit. Mus., vol. i., p. 315; Gould's Handbook, vol. i., p. 17,
sp. 4.

The ground colour of these eggs is dull white, without gloss, and the markings vary considerably, no two being alike, those from one nest being most similar. Some have large dark brown blotches forming an irregular zone round the larger end; others are plentifully marked with brown spots on the smaller end; some have very light brown or buff blotches on the larger end, decreasing in number towards the smaller end; another egg has only markings on the small end, which are very numerous right over the apex; others, again, have only a few small brown markings, mostly on the larger end. Eight nests with fresh eggs in were found, on the following dates:—17th, 30th April (2); 1st, 2nd, 7th, 17th May, and 1st June. Two of the nests had two eggs in, the rest one each. The eggs measure—A, (1) 2.18 x 1.66, (2) 2.18 x 1.70; B, 2.12 x 1.68; C, 2.24 x 1.67; D, 2.28 x 1.72; E, 2.16 x 1.74; F, 2.46 x 1.69; G, 2.18 x 1.72; H, 2.10 x 1.84 inches.

HALIASTUR SPHENURUS (Whistling Eagle).

Cat. B. Brit. Mus., vol. i., p. 316; Gould's Handbook, vol. i., p. 20,
sp. 5.

The eggs of these birds are of a dull white, with very few markings. Some have practically none; others, again, a few faint small ones on the larger end, on the apex, or forming an irregular zone, while some have a few irregular spots or lines of reddish-brown scattered over the surface. The clutch is generally two, but occasionally only one, and rarely three. The dates on which these eggs were taken are—26th April; 9th, 22nd, and 28th May. They measure—A, (1) 2.20 x 1.68, (2) 2.20 x 1.68; B, (1) 2.18 x 1.66, (2) 2.28 x 1.70; C, 2.23 x 1.80; D, 2.27 x 1.77; E, 2.20 x 1.70; F, 2.31 x 1.76 inches.

MILVUS AFFINIS (Kite).

Cat. B. Brit. Mus., vol. i., p. 323; Gould's Handbook, vol. i., p. 219,
sp. 21.

Kites seem very plentiful in the northern districts of Australia. Their eggs vary in size and markings, and are a swollen oval in shape, like that of a Great Kingfisher, which easily distinguishes

them from other Australian Hawks' eggs. One curious point about Kites' eggs is that the larger majority of them have the apex of the smaller end covered more or less with markings, instead of the larger end, as is the case with nearly all other birds' eggs. The ground colour is dull white, some having cloudy reddish-brown markings, which coalesce, on the apex of the smaller end, and very few, if any, on the other; others, again, have small light brown spots on the apex of the same end, and some have light brown or buff spots scattered fairly evenly over the egg. Occasionally some are seen with a few dark brown blotches on the larger end. The inside lining is greenish.

The full clutch is four, but many nests have only one, two, or three in. The dates on which nine nests and fresh eggs were found are as follows:—3rd, 4th, 6th, 20th, 21st, and 28th May (2), 1st and 3rd June. The eggs measure—A, (1) 2.14 x 1.65 (2) 2.11 x 1.68; B, 2.04 x 1.57; C, 1.98 x 1.69; D, 2.09 x 1.70; E, 2 x 1.62; F, 2.15 x 1.67; G, 2.04 x 1.71; H, 1.96 x 1.58 inches.

LOPHOICTINIA ISURA (Square-tailed Kite).

Cat. B. Brit. Mus., vol. i., p. 326; Gould's Handbook, vol. i., p. 51, sp. 22.

The eggs of these birds are very similar in appearance to those of the other Kite, and one has to see the parent bird fly off to make sure of their identity. As a whole they are slightly larger, and are of a dull white, with a few brown spots, either clustering on the smaller end or scattered over the egg; but some have no spots on, and in others there are cloudy markings of light buff. The dates on which three nests with fresh eggs were found are 2nd (2) and 3rd July. The eggs measure—A, (1) 2.14 x 1.74, (2) 2.17 x 1.74; B, (1) 2.7 x 1.84, (2) 2.6 x 1.73; C, 2.10 x 1.65 inches.

HIERACIDEA ORIENTALIS (Brown Hawk).

Cat. B. Brit. Mus., vol. i., p. 422; Gould's Handbook, vol. i., p. 31, sp. 11.

Only one nest of this bird was found, and it contained two fresh eggs, but they differed considerably in markings, one having the larger end covered with confluent reddish-brown blotches of varying shades. The other egg is smaller, and is thickly speckled all over with light reddish-brown spots, which at both ends are confluent, those at the larger end being darker than those at the smaller end. They measure—(1) 2.22 x 1.58; (2) 2.10 x 1.54 inches.

CERCHNEIS CENCHROIDES (Nankeen Kestrel.)

Cat. B. Brit. Mus., vol. i., p. 431; Gould's Handbook, vol. i., p. 35, sp. 13.

8th July was the date on which the nest, containing three fresh eggs, of this graceful bird was found. They were deposited on

the decayed wood at the bottom of a hollow in a eucalyptus tree, and are unusually light in colour. They are dull white, with a very slight gloss, two being marked all over with irregular dots and a few larger spots of reddish-brown; but the third has a few small spots as well as a zone of large light reddish-brown markings, more or less confluent, near the centre of the egg, but slightly towards the smaller end. They measure—(1) 1.47×1.15 ; (2) 1.50×1.12 ; (3) 1.55×1.15 inches.

PANDION HALIAETUS, sub-species LEUCOCEPHALUS (White-headed Osprey).

Cat. B. Brit. Mus., vol. i., p. 451; Gould's Handbook, vol. i., p. 22, sp. 6.

The eggs of these birds are very handsome, and vary much, some being dull white and richly marked with large dark brown blotches, in some places appearing almost black, and lighter markings of a purplish hue beneath the surface; others, again, are a light buff and thickly marked with dark reddish-brown, especially at the larger end, while occasionally you find eggs of a dull white, with a few bold dark brown markings.

These eggs also vary much in size. A clutch I received from the West Australian coast measures—(1) 2.58×1.87 , (2) 2.57×1.84 , (3) 2.59×1.87 . Another clutch, from the North-eastern coast, measures—(1) 2.52×1.72 , (2) 2.54×1.71 ; while those received from the Port Darwin district measure—A, (1) 2.58×1.86 , (2) 2.23×1.75 ; B, 2.28×1.64 ; C, 2.20×1.67 ; D, 2.20×1.68 inches. The last three are unusually small.

GRAUCALUS HYPOLEUCUS (White-bellied Cuckoo-Shrike).

Cat. B. Brit. Mus., vol. iv., p. 36; Gould's Handbook, vol. i., p. 196, sp. 106.

Two nests of these birds were found, on 24th and 29th November, each with two fresh eggs in. The clutches measure—A, (1) $1.05 \times .76$, (2) $1.08 \times .76$; B, (1) $1.13 \times .76$, (2) $1.14 \times .78$ inches. The nests were the usual shallow structures, almost flat, and built on the horizontal fork of a branch, and were composed of fine twigs, well matted together with cobweb. The eggs are pale green, well marked with blotches of brown and greenish-brown markings, these generally being most numerous at the larger end. The markings are much more plentiful on some eggs than others.

GRAUCALUS MELANOPS (Black-faced Cuckoo-Shrike).

Cat. B. Brit. Mus., vol. iv., p. 30; Gould's Handbook, vol. i., p. 192, sp. 103.

These birds have a wide range, being found all over Australia, as well as on the islands to the north. Two of their nests were discovered, on 10th October and 12th December, one containing three and the other one egg. The structures were

composed of short pieces of twig and cobweb, were very shallow, and situated at a horizontal fork. The colour of the eggs is green, well marked with olive-brown blotches, most plentiful at the larger end; the ground colour is slightly darker in some eggs than others. Measurements—A, 1.33 x .93; B, (1) 1.30 x .89, (2) 1.28 x .85, (3) 1.28 x .86 inches.

LALAGE LEUCOMELÆNA (Pied Caterpillar-catcher).

Cat. B. Brit. Mus., vol. iv., p. 106; Gould's Handbook, vol. i., pp. 202, 203, sp. 110, 111.

These birds are fairly plentiful about Port Darwin, but their nests, being small, inconspicuous structures, are not often seen. They are open, cup-shaped, and rather shallow, and are composed of fine twigs well fastened together with cobwebs, generally at a fork of a branch. The colour of the single egg laid is very pale green, with purplish-brown markings scattered fairly evenly over it; it measures .98 x .66 inch, and was found on 3rd December.

RHIPIDURA TRICOLOR (Black and White Fantail).

Cat. B. Brit. Mus., vol. iv., p. 339; Gould's Handbook, vol. i., pp. 244, 245, sp. 139, 140.

This is probably the best known Fantail in Australia, and is always a favourite. In choosing a nesting site it generally prefers to have a leafy bough just above to screen its home from observation. The nest is a beautiful structure, made of fine grass, shreds of bark, &c., and well covered with cobwebs. This Fantail builds from September to December. The eggs are a very pale cream, marked with purplish-grey or purplish-brown fine spots, which form a zone on the larger end. One clutch of three measures—(1) .63 x .53; (2) .67 x .53; (3) .65 x .53 inch. These birds are *S. picata* of Gould.

SISURA INQUIETA (Restless Flycatcher).

Cat. B. Brit. Mus., vol. iv., p. 407; Gould's Handbook, vol. i., p. 246, sp. 141.

These birds are plentiful in the scrub-covered country, and build their open nests in varying situations, sometimes low down and at others high up. The nests are composed outwardly of shreds of bark and grass, with pieces of bark fastened on with a small amount of cobweb, and are lined with dark-coloured vine tendrils and a few fine rootlets. The eggs are white, occasionally pale cream, with purplish-brown markings, mostly forming a zone round the larger end, in some cases confluent, but not always. They measure—A, (1) .74 x .58, (2) .75 x .60, (3) .76 x .58; B, (1) .73 x .58, (2) .73 x .57, (3) .74 x .57; C, (1) .74 x .56, (2) .75 x .57 inch. All the nests (about ten) were found in December and January.

PIEZORHYNCHUS NITIDUS (Shining Flycatcher).

Cat. B. Brit. Mus., vol. iv., p. 416 ; Gould's Handbook, vol. i., p. 249, sp. 142.

The eggs of these birds are slightly larger than those of the preceding species, and the markings more diffused. The large majority of their open nests were found in January, but a few in February. They are made of shreds of melaleuca bark, with a small quantity of cobweb on the outside, and are lined with fine grass-stalks. The structures are somewhat loosely built. The eggs are white, slightly lustrous, with grey and greyish-brown markings, more plentiful on the larger end, where they usually form a zone, and are more or less confluent. They measure—A, (1) .83 x .58, (2) .84 x .58 ; B, (1) .81 x .59, (2) .83 x .62 ; C, (1) .76 x .56, (2) .75 x .58 inch.

PETRÆCA RAMSAYI (Red-throated Robin).

Cat. B. Brit. Mus., vol. iv., p. 172.

These pretty little birds are met with in the Port Darwin district, but are not plentiful. Only one of their nests was found, on 8th December, and this contained one fresh egg. The nest was the usual open structure, and compactly built of fine shreds of bark and grass, ornamented outwardly with a few pieces of lichen and bark, fastened on with cobweb. It is lined with fine shreds of grass and a little fur, and measures—internal depth, 1½ inches ; internal breadth, 1½ inches ; external depth, 2¾ inches ; external breadth, 2½ inches. It was situated about 8 feet from the ground in a nearly upright fork of a eucalyptus tree. The egg is very pale bluish-green, with delicate greyish-brown markings, those beneath the surface being very pale purplish-grey. These markings are more plentiful on the larger end. The egg is fine and glossy, and measures .63 x .48 inch.

PSEUDOGERYGONE BRUNNEIPECTUS (Brown-breasted Fly-eater).

Cat. B. Brit. Mus., vol. iv., p. 221.

One nest of this bird was found, on 26th March, suspended from near the end of a thin branch overhanging the river. It is a bulky structure for such small birds ; it is loosely built of very fine dark-coloured rootlets, vine tendrils, and frayed grass, its length being 10½ inches and breadth 4 inches. The nesting chamber is 3½ inches high by 2 inches broad, and the opening into the nest about 1¼ inches. The eggs are pinkish-white, and thickly freckled with reddish-brown, especially on the larger end. In one egg the markings are confluent on the larger end. They measure—(1) .66 x .44 ; (2) .64 x .42 inch. The eggs of this bird have not been described before.

PSEUDOGERYGONE LÆVIGASTRA (Buff-breasted Fly-eater).

Cat. B. Brit. Mus., vol. iv., p. 223 ; Gould's Handbook, vol. i., p. 270, sp. 159.

This little bird is found in scrubby country, and builds a

dome-shaped hanging nest, very similar to that of *P. personata*; it is generally suspended from near the end of a branch of a shrub, and from about 10 to 15 feet from the ground, and is composed of fine long grass-stalks and coarser shreds, and on the outside are fastened on with cobweb, numerous round white scale larvæ, cocoons, pieces of lichen, and excreta of caterpillars, and it is lined with very fine grass and a soft white material which looks like thistle down, and measures—exterior length $8\frac{1}{2}$ inches, width $2\frac{1}{2}$ inches; nesting chamber, 2 inches deep by $1\frac{1}{4}$ inches wide. The covering or porch over the entrance is large, being 2 inches square, and the opening into the nest is about 1 inch square. The eggs are white, speckled over with small reddish-brown markings, most numerous on the larger end, where they generally form a zone. They measure—A, (1) .68 x .46, (2) .64 x .46; B, (1) .63 x .46, (2) .64 x .46 inch. These eggs have not been described before, as far as I am aware, and one clutch was found on 9th January and the other on 17th March.

PSEUDOGERYGONE CHLORONOTA (Green-backed Fly-eater).

Cat. B. Brit. Mus., vol. iv., p. 229; Gould's Handbook, vol. i., p. 271, sp. 160.

This little bird also keeps in the dense scrub-covered country, especially among the mangroves, and, being of an inconspicuous colour, is difficult to catch sight of. Its dome-shaped nest is generally suspended from a thin branch, and is composed of soft shreds of grass and fine rootlets, and plentifully lined with thistle down. It measures—external length, $4\frac{1}{2}$ inches; external breadth, $3\frac{1}{2}$ inches; and the nesting chamber is 2 x $2\frac{1}{2}$ inches. The eggs are white, plentifully marked with fine, elongated reddish-brown dots, which predominate at the larger end, sometimes forming a zone. They measure—A, (1) .68 x .48, (2) .68 x .47, (3) .69 x .48; B, (1) .69 x .46, (2) .65 x .46; C, (1) .67 x .47, (2) .66 x .48 inch. They were all found in December. This is another species whose eggs I do not think have been described before.

MALURUS DORSALIS (Red-backed Wren).

Cat. B. Brit. Mus., vol. iv., p. 296; Gould's Handbook, vol. i., p. 334, sp. 179.

These Wrens are the smallest of the Maluri, and are plentiful in suitable localities in Northern Australia. Several of their nests were found; they were the usual dome-shaped structure, and were composed of shreds of grass, and lined with fine grass. Some of the nests have leaves and thistle down worked in, others grass only. The eggs are white, with dark reddish markings on, which are more numerous at the larger end, frequently forming a zone. Two clutches, which were found on 1st February and 23rd January, measure—A, (1) .56 x .43,

(2) .56 x .43, (3) .55 x .43; B, (1) .55 x .40, (2) .52 x .41, (3) .53 x .42 inch.

CISTICOLA EXILIS (Grass-Warbler).

Cat. B. Brit. Mus., vol. vii., p. 269; Gould's Handbook, vol. i., p. 350, sp. 208-212.

Many nests of these little birds were found during January and February, the larger number in the former month. They were largely composed of the down off the seeds of thistles and similar plants and cobweb, and in most cases the birds had sewn some of the leaves of the bush in which the nest was built round the structure, the thread being made of cobweb, somewhat similar to the nest of the Tailor-Bird. This was a great protection to the exceedingly light and delicate structure. The eggs are of a beautiful glossy bluish-green colour, with reddish-brown markings, which are larger in some clutches than in others, and most numerous on the larger end. They measure—A, (1) .56 x .42; (2) .54 x .42; (3) .58 x .44; (4) .56 x .44 inch.

PACHYCEPHALA FALCATA (Northern Thickhead).

Cat. B. Brit. Mus., vol. viii., p. 205; Gould's Handbook, vol. i., p. 213, sp. 117.

Two nests of this bird were found, one containing three fresh eggs and the other one; dates, 10th October and 26th January. They were the usual cup-shaped structures, and made of fine twigs and grass. The eggs are olive, one clutch darker than the other, and have olive-brown markings, those beneath the surface being purplish-grey. The spots are most numerous on the larger end. They measure—A, .82 x .6; B, (1) .83 x .64, (2) .82 x .63, (3) .83 x .64 inch.

ZOSTEROPS GULLIVERI (Gulliver White-eye).

Cat. B. Brit. Mus., vol. ix., p. 188.

This little bird's nest was found on 17th January, suspended from a thin fork near the end of a branch; it is composed outwardly of fine shreds of bark, with a little cobweb, and lined with fine rootlets. It measures—external depth, 2 inches; external breadth, 2 inches; internal depth, 1 inch; internal breadth, $1\frac{1}{2}$ inches. The eggs are a delicate bluish-green, slightly darker than those of *cærulescens*, and glossy. They measure—(1) .58 x .42; (2) .58 x .40; (3) .58 x .40 inch. The eggs of this bird have not hitherto been described.

GLYCYPHILA FASCIATA (White-breasted Honey-eater).

Cat. B. Brit. Mus., vol. ix., p. 212; Gould's Handbook, vol. i., p. 499, sp. 303.

This bird seems fairly plentiful, and several nests were found. The latter are usually suspended near the end of some branch on a shrub growing in or near a watercourse, and are com-

posed of the light paper-bark of the melaleuca tree. They are domed and rather bulky structures, loosely built. The eggs are white, with a few reddish markings, most numerous at the larger end, more plentiful on some eggs than others. The clutch is generally two, and they measure—A, (1) .78 x .51, (2) .72 x .52; B, (1) .74 x .53, (2) .74 x .53 inch. They were all found in January.

PTILOTTIS KEARTLANDI (Kearland Honey-eater).

Report Horn Expedition.

A nest of this Honey-eater was found in January, containing one fresh egg; it is a light pinkish-buff, with a few pale spots on the larger end, and measures .88 x .68 inch. The open nest was suspended from a fork on a thin branch, and composed of grass, lined inside with fine rootlets.

PTILOTTIS NOTATA (Yellow-spotted Honey-eater).

Cat. B. Brit. Mus., vol. ix., p. 227.

This lively bird generally prefers the thick scrub, and one of its nests was found on 16th January, containing one fresh egg. It was suspended from a fork of a bush, and not far from the ground. The nest was lined with white down. The egg is white, with a few brown spots scattered over it, and measures .91 x .67 inch.

GLYCYPHILA OCULARIS (Brown Honey-eater).

Cat. B. Brit. Mus., vol. ix., p. 213; Gould's Handbook, vol. i., p. 500, sp. 304.

These birds are generally found near watercourses—at least such has been my experience, both in Western Australia and Queensland, and their presence is soon known by the clear note. Their nest is open, and suspended from a fork near the end of a branch. The eggs vary, being in some cases pure white; others, again, of a delicate pink, some with a few faint reddish-brown markings on the larger end; others, again, are quite plain. They measure—A, (1) .68 x .49, (2) .64 x .53; B, (1) .63 x .48, (2) .61 x .48 inch.

ENTOMOPHILA LEUCOMELAS (Pied Honey-eater).

Cat. B. Brit. Mus., vol. ix., p. 220; Gould's Handbook, vol. i., p. 529, sp. 325.

This interesting bird has a wide range over Australia. One of its open, suspended nests was found on 2nd February; it contained three fresh eggs. These are white, well marked with blackish spots, those under the surface being lilac. The eggs measure—(1) .73 x .53; (2) .76 x .52; (3) .75 x .51 inch. The nest is composed of grass, lined with the same material, and measures—external breadth, 3 inches; internal, $1\frac{3}{4}$ inches; external depth, $2\frac{1}{4}$ inches; internal, 2 inches.

PHILEMON BUCEROIDES (Helmeted Friar-Bird).

Cat. B. Brit. Mus., vol. ix., p. 272 ; Gould's Handbook, vol. i., p. 547, sp. 335.

These noisy birds are more plentiful in northern Queensland than about Port Darwin. One of their open, suspended nests was found on 19th September, and it contained four fresh eggs, although the usual clutch is three. They are a pinkish-white, boldly marked with reddish and reddish-brown blotches, slightly more numerous at the larger end. The eggs of this bird vary considerably in their markings, some having a few fine ones; others, again, are finely speckled, as well as having bold blotches; another type is thickly marked all over with red, the markings being more or less confluent, and the ground colour is pink. A clutch of four measures—(1) 1.23 x .87 ; (2) 1.26 x .88 ; (3) 1.19 x .85 ; (4) 1.23 x .87 inches.

PHILEMON CITREOGULARIS, sub-species SORDIDUS (Little Friar-Bird).

Cat. B. Brit. Mus., vol. ix., p. 277 ; Gould's Handbook, vol. i., p. 550, sp. 338.

The Little Friar-Bird builds an open, suspended nest, generally of shreds of bark and fine grass, but occasionally of leaves of the casuarina tree; as in the case of the before-mentioned bird, the eggs of the Little Friar-Bird vary much in markings. The ground colour is pale pink, well marked with reddish-brown blotches, which in some cases form a confluent zone round the larger end, those beneath the surface being grey; some eggs are pink and well covered with reddish markings. A clutch of three measures—(1) 1.12 x .76 ; (2) 1.8 x .78 ; (3) 1.02 x .74 inches.

PETROCHELIDON ARIEL (Fairy Martin).

Cat. B. Brit. Mus., vol. x., p. 199 ; Gould's Handbook, vol. i., p. 114, sp. 56.

These little birds are found all over Australia, and also in Tasmania. They generally build their retort-shaped mud nests in colonies and under cover, such as the excrescences on trees, also under bridges, &c., and almost invariably near water. The eggs are white, with fine speckles of reddish-brown, sometimes forming a zone round the larger end; occasionally there are no markings. A full clutch of five measures—(1) .66 x .46 ; (2) .67 x .47 ; (3) .68 x .48 ; (4) .64 x .48 ; (5) .62 x .45 inch. Date, 5th October.

ARTAMUS LEUCOGASTER (White-rumped Wood-Swallow).

Cat. B. Brit. Mus., vol. xiii., p. 3 ; Gould's Handbook, vol. i., p. 155, sp. 80.

Only one nest of this bird was found, and it was the usual open structure, composed of coarse grass, and lined with finer

pieces of the same material. It was situated in a shallow open hollow in a dead branch, and contained four eggs, which are white, with fairly large markings of brownish-buff, especially on the larger end. They measure—(1) .91 x .66 ; (2) .93 x .67 ; (3) .89 x .64 ; (4) .89 x .65 inch. Date, 17th November.

ARTAMUS MELANOPS (Black-faced Wood-Swallow).

Cat. B. Brit. Mus., vol. xiii., p. 17 ; Gould's Handbook, vol. i., p. 149, sp. 77.

Several nests of these birds were found from 11th November to 3rd December. They were usually built in thick shrubs, but sometimes in a hollow on the top of a stump or similar place, and were made up of rootlets and fine tendrils, lined with grass. The eggs are pinkish-white, marked with reddish-brown spots, especially on the larger end, where they sometimes form a zone, which is occasionally confluent, but the markings vary a good deal in different clutches. Two clutches measure—A, (1) .88 x .60, (2) .86 x .62, (3) .85 x .63 ; B, (1) .81 x .63, (2) .78 x .68, (3) .83 x .66 inch.

ARTAMUS MINOR (Little Wood-Swallow).

Cat. B. Brit. Mus., vol. xiii., p. 20 ; Gould's Handbook, vol. i., p. 146, sp. 74.

3rd January was the date on which a nest containing three fresh eggs of this bird was found. It was built of fine rootlets, lined with grass, and placed in a slight hollow, near the top of a stump. The eggs are white, marked, especially on the larger end, with brown spots, which are of a darker hue where they apparently overlap one another ; sometimes they have a few odd markings which are nearly black. My specimens measure—(1) .73 x .59 ; (2) .75 x .60 ; (3) .74 x .58 inch.

STICTOPTERA ANNULOSA (Ringed Finch).

Cat. B. Brit. Mus., vol. xiii., p. 314 ; Gould's Handbook, vol. i., p. 410, sp. 252.

These birds build nests loosely constructed of coarse grass, and lined with the fine tops of some grass in seed. The delicate little eggs are pure white, generally somewhat elongated in form, and measure—(1) .54 x .40 ; (2) .54 x .38 ; (3) .55 x .38 ; (4) .52 x .38 inch. The dates on which the several clutches were found are 13th, 21st, and 26th January. The nests measure 5 inches high by 4 inches broad externally, the nesting chamber being 2½ inches high by 1½ inches broad, and were built in shrubs, about 10 feet from the ground.

POEPHILA ACUTICAUDA (Long-tailed Grass-Finch).

Cat. B. Brit. Mus., vol. xiii., p. 375 ; Gould's Handbook, vol. i., p. 422, sp. 261.

One nest of this pretty bird was found, situated in a thick bush, close to the ground. It was loosely built of coarse grass,

and lined with fine grass and a few feathers. The eggs are pure white, and measure—(1) .62 x .44; (2) .64 x .45; (3) .65 x .45; (4) .64 x .46 inch.

POEPHILA PERSONATA (Masked Grass-Finch).

Cat. B. Brit. Mus., vol. xiii., p. 377; Gould's Handbook, vol. i., p. 423, sp. 262.

Three nests of this bird were obtained, on 24th January, 3rd and 5th February. They are bulky, and loosely constructed of coarse grass, lined principally with feathers of cockatoos, parrots, emus, &c., and measure externally 6 inches high by 4 inches wide; nesting chamber $2\frac{1}{2}$ inches high by $1\frac{1}{2}$ inches wide. Two were built in low-growing shrubs and one in long grass. The eggs are white, and elongated in form, the dimensions being—(1) .61 x .43, (2) .63 x .42, (3) .61 x .43, (4) .66 x .43, (5) .62 x .43, (6) .61 x .43 inch.

POEPHILA MIRABILIS (Gouldian Grass-Finch).

Cat. B. Brit. Mus., vol. xiii., p. 378; Gould's Handbook, vol. i., p. 420, 421, sp. 259 and 260.

This most beautiful of all Finches is found in Northern Australia, and one of its nests was found on 17th December, containing five eggs. It was built of coarse grass and situated in a hollow at the end of a spout of a eucalyptus tree. The eggs were white, and measure—(1) .66 x .46; (2) .68 x .48; (3) .67 x .46; (4) .67 x .45; (5) .68 x .47 inch.

NEOCHMIA PHAETON (Crimson Finch).

Cat. B. Brit. Mus., vol. xiii., p. 389; Gould's Handbook, vol. i., p. 415, sp. 256.

The nest of this beautiful bird is built of coarse grass, and lined with the white downy seed-stem of some grass and a few feathers, making a very soft nesting chamber. Measurements, externally, 6 inches by 4 inches. The pure white eggs measure—(1) .60 x .41; (2) .62 x .44; (3) .62 x .43; (4) .60 x .43 inch.

ÆGOTHELES NOVÆ-HOLLANDIÆ (Little Nightjar).

Cat. B. Brit. Mus., vol. xvi., p. 657; Gould's Handbook, vol. i., p. 79, 80, sp. 38 and 39.

Two nests of Little Nightjars were found in hollows in branches of eucalyptus trees; in one case there were a few leaves at the bottom of the hole, and in the other a few shreds of grass. The eggs are pure white, and when rubbed together produce a sound like china, similar to Quails' eggs. The dimensions are—(1) 1.17 x .88; (2) 1.16 x .89; (3) 1.15 x .90 inches. The dates were 20th September and 15th October.

EURYSTOMUS AUSTRALIS (Roller or Dollar-Bird).

Cat. B. Brit. Mus., vol. xvii., p. 36; Gould's Handbook, vol. i., p. 119, sp. 59.

These birds soon attract one's attention when in their neigh-

bourhood, not only by their notes, but also by their curious antics when on the wing, and their habit, if disturbed when nesting, of darting into holes in trees, apparently to mislead the intruder as to the hollow in which their eggs really are. They make no nest, the eggs being placed on the decayed wood at the bottom of the hollow. Two sets of four eggs were found—one on 25th October, and the other on 9th December. They are pure white, somewhat rounded, and measure—(1) 1.26 x .99; (2) 1.32 x 1.1; (3) 1.36 x 1.6; (4) 1.29 x 1 inches.

MEROPS ORNATUS (Bee-eater).

Cat. B. Brit. Mus., vol. xvii., p. 74; Gould's Handbook, vol. i., p. 117, sp. 58.

These beautiful birds are very plentiful in the nesting season, and have a habit of sitting on a post or stump, and darting out to catch any unwary insect that may pass by. They make their nesting chamber at the end of a burrow, which they drill in the ground, usually in sandy soil, and lay four white eggs, which measure—(1) .81 x .70; (2) .79 x .67; (3) .80 x .67; (4) .79 x .69 inch. Date, 3rd November.

DACELO LEACHII (Leach Kingfisher).

Cat. B. Brit. Mus., vol. xvii., p. 206; Gould's Handbook, vol. i., p. 124, sp. 61.

The various nests I have personally found of these birds have all been holes drilled in the earthen nests of termites, situated at the fork of a eucalyptus tree, generally at a considerable height from the ground. The eggs are rounded and pure white, and vary considerably in size, as one clutch from Rockhampton measures—(1) 1.78 x 1.50; (2) 1.84 x 1.52; and a clutch from Port Darwin—(1) 1.72 x 1.36; (2) 1.81 x 1.35; (3) 1.81 x 1.32 inches. Several clutches from the Northern Territory are in the collection, but their dimensions are practically the same as those last given.

DACELO LEACHII, sub-species **CERVINA** (Fawn-breasted Kingfisher).

Cat. B. Brit. Mus., vol. xvii., p. 207; Gould's Handbook, vol. i., p. 125, sp. 62.

Two clutches of this bird's eggs were found, both consisting of three. Dates, 25th October and 7th December. They were laid in the decomposed wood at the bottom of a hollow in a eucalyptus tree, and are pure white, rounded in shape, and measure—(1) 1.56 x 1.38; (2) 1.52 x 1.29; (3) 1.61 x 1.36 inches.

HALCYON PYRRHOPYGIUS (Red-backed Kingfisher).

Cat. B. Brit. Mus., vol. xvii., p. 258; Gould's Handbook, vol. i., p. 130, sp. 64.

A nest of a pair of these birds was found at the end of a tunnel drilled in the bank of a river; the other was secured in a

hollow in a tree, and on the floor of the nest were a few fish bones, &c., lying about. The eggs are rounded, pure white, and slightly glossy, and measure—(1) 1.01 x .85; (2) .97 x .87; (3) .94 x .86; (4) .92 x .87; (5) 1.01 x .84 inches. Dates, 2nd October and 3rd December.

HALCYON SANCTUS (Sacred Kingfisher).

Cat. B. Brit. Mus., vol. xvii., p. 267; Gould's Handbook, vol. i., p. 128, sp. 63.

Two clutches of the eggs of this bird were found in burrows drilled in termites' earthen nests, situated on forks of eucalyptus trees, on 17th December and 25th January. One contained five and the other three eggs. They are white, rounded, and slightly glossy, and measure—(1) .98 x .82; (2) .98 x .86; (3) .99 x .85; (4) 1.0 x .82, (5) .98 x .80 inch.

CENTROPUS PHASIANUS (Coucal).

Cat. B. Brit. Mus., vol. xix., p. 340; Gould's Handbook, vol. i., p. 634, sp. 388-390.

This curious Cuckoo has a wide range over Northern Australia, and is plentiful in suitable localities, and from its habit of generally making its nest in a tussock of grass its eggs are easily found. Several clutches are in the collection, mostly found in nests placed in the grass, and with that vegetation drawn together and so forming a covering over the nest; but two clutches were laid in shallow, open stick nests in a pandanus palm, about 8 feet from the ground. The eggs are creamy-white, and slightly glossy, and the general clutch is four. A typical set measures—(1) 1.53 x 1.8; (2) 1.47 x 1.6; (3) 1.52 x 1.10; (4) 1.51 x 1.9 inches. The dates were in December, January, and February.

CALYPTORHYNCHUS MACRORHYNCHUS (Great-billed Cockatoo).

Cat. B. Brit. Mus., vol. xx., p. 110; Gould's Handbook, vol. ii, p. 15, sp. 398.

This bird breeds in the hollow branches of the eucalyptus trees, in the neighbourhood of Port Darwin, generally in the month of July. Apparently one egg is usually laid, but occasionally two. They are elongated, white in colour, finely pitted, and measure—A, 1.88 x 1.20; B, 1.90 x 1.20; C, 1.88 x 1.36 inches.

CACATUA GYMNOPIS (Bare-eyed Cockatoo).

Cat. B. Brit. Mus., vol. xx., p. 127.

These birds often assemble in large flocks, and the trees on which they congregate look white with them and exceedingly picturesque. They nest in hollow spouts, generally laying from two to three eggs, occasionally four. The eggs are white and finely pitted, and measure—(1) 1.58 x 1.24; (2) 1.64 x 1.22; (3) 1.60 x 1.20 inches. They were taken in June and July.

LICMETIS NASICA (Long-billed Cockatoo, Corella).

Cat. B. Brit. Mus., vol. xx., p. 133 ; Gould's Handbook, vol. ii., p. 11, sp. 95.

Hollows in eucalyptus trees are the nesting-places of these birds, and they frequently nest in company, two or three being in one tree. The eggs are small, compared with the size of the bird, and are white and finely pitted. Two clutches of two each measure—A, (1) 1.52 x 1.12, (2) 1.58 x 1.14 ; B, (1) 1.52 x 1.06, (2) 1.49 x 1.11 inches. They were taken in April and May.

PTISTES ERYTHROPTERUS, sub-species COCCINEOPTERUS (Crimson-winged Lory).

Cat. B. Brit. Mus., vol. xx., p. 481 ; Gould's Handbook, vol. ii., p. 39, sp. 411.

This bird is one of our most beautiful Parrots. It nests in the hollow spouts in eucalyptus trees, laying its white eggs on the decomposed wood. Several nests were found, all in January. The eggs are oval in form, and measure—A, (1) 1.17 x 1.01, (2) 1.20 x 1.0 ; B, (1) 1.15 x .98, (2) 1.12 x .99 inches.

PSEPHOTUS PULCHERRIMUS (Beautiful Parrakeet).

Cat. B. Brit. Mus., vol. xx., p. 564 ; Gould's Handbook, vol. ii., p. 67, sp. 429.

This lovely bird generally pierces a tunnel in the termites' mounds on the ground, in open forest country, and makes a chamber of considerable size, the honeycombed structure being easily hollowed out. The eggs are pure white, slightly glossy, somewhat oval, and measure—(1) .85 x .70 ; (2) .78 x .66 ; (3) .72 x .67 ; (4) .72 x .68 ; (5) .80 x .68 inch. This clutch was found on 10th December.

PTILOPUS EWINGI (Rose-crowned Fruit-Pigeon).

Cat. B. Brit. Mus., vol. xxi., p. 96 ; Gould's Handbook, vol. ii., p. 107, sp. 452.

This bird was found breeding in the mangroves alongside tidal rivers. The nests are very fragile, the single egg easily displaced. The birds, being green in colour, when sitting on their nest, almost at the end of a branch, among the green leaves, are very difficult to detect. The egg is pure white, slightly glossy, the smaller end being often more pointed than usual. Three nests were found, one in January and two in February. The eggs measure—A, 1.25 x .84 ; B, 1.21 x .80 ; C, 1.19 x .80 inches.

MYRISTICIVORA SPILORRHOA (Nutmeg Pigeon).

Cat. B. Brit. Mus., vol. xxi., p. 231 ; Gould's Handbook, vol. ii., p. 114, sp. 457.

These birds as a rule nest in large companies in the small islands off the north coast of Queensland, but occasionally they may be found breeding in pairs on the mainland. Their nest is

a fairly large structure, often being lined with leaves. A single white egg is deposited, the smaller end of which is occasionally pointed. The eggs measure—A, 1.72 x 1.22; B, 1.68 x 1.19; C, 1.69 x 1.18 inches. The three eggs measured were found in December and January, in nests situated in the mangroves, by a tidal river, near Port Darwin. November is the month in which these birds commence nesting in Queensland.

GEOPELIA HUMERALIS (Barred-shouldered Dove).

Cat. B. Brit. Mus., vol. xxi., p. 455; Gould's Handbook, vol. ii., p. 142, sp. 471.

These birds have a wide range over Northern Australia, and, if protected, will occasionally build their light stick nests in shrubs of gardens near houses. The clutch of eggs is two; they are white, slightly glossy, and measure—A, (1) 1.06 x .78, (2) 1.08 x .80; B, (1) 1.10 x .83, (2) 1.10 x .80 inches. January.

GEOPELIA TRANQUILLA (Ground Dove).

Cat. B. Brit. Mus., vol. xxi., p. 456; Gould's Handbook, vol. ii., pp. 144, 145, sp. 472 and 473.

These delicately coloured birds range over all Australia. Their small, fragile nests are sometimes built of fine twigs, sometimes of grass, and are usually situated in a low bush, but occasionally on the rough bark of a horizontal bough of a eucalyptus tree. The clutch is two, and the eggs are white and slightly glossy. One clutch measures—(1) .96 x .73; (2) .96 x .72 inch. Dates also all in January.

GEOPELIA CUNEATA (Little Dove).

Cat. B. Brit. Mus., vol. xxi., p. 462; Gould's Handbook, vol. ii., p. 146, sp. 474.

The nest of this dear little bird is a very fragile structure, and one often wonders how the eggs remain on when the parents leave and alight on it. Several sets are in the collection, all taken in January. The clutch is two, the eggs white, with very little gloss, and they measure—A, (1) .81 x .63, (2) .82 x .61; B, (1) .80 x .62, (2) .79 x .61 inch.

HISTRIOPHAPS HISTRIONICA (Flock Pigeon).

Cat. B. Brit. Mus., vol. xxi., p. 529; Gould's Handbook, vol. ii., p. 127, sp. 464.

Only one egg of this bird was sent, found on 14th November, on the bare ground, alongside a tussock of grass. It is white, slightly glossy, and measures 1.36 x 1.01 inches.

LOPHOPHAPS LEUCOGASTER (White-bellied Plumed-Pigeon).

Cat. B. Brit. Mus., vol. xxi., p. 535.

A single egg of this bird was found on the ground by a tussock of grass, in a very shallow depression, on 2nd January. It is creamy-white in colour, nearly oval in shape, and measures 1.06 x .86 inches.

MEGAPODIUS DUPERREYI (Scrub Fowl).

Cat. B. Brit. Mus., vol. xxii., p. 454; Gould's Handbook, vol. ii., p. 167, sp. 478.

This bird is found right across Northern Australia, near the coast, in suitable country, and its large mound, composed of leaves, sticks, and soil, is built in the dense scrub. The usual clutch is ten, but the numbers vary. They are pink, which if scraped off (easily done), shows a white surface. Three found in one mound on 13th November measure—(1) 3.50 x 2.16; (2) 3.30 x 2.20; (3) 3.52 x 2.19 inches. The shells occasionally have small limy concretions on them.

SYNÆCUS AUSTRALIS (Brown Quail).

Cat. B. Brit. Mus., vol. xxii., p. 247; Gould's Handbook, vol. ii., p. 195, sp. 487-489, and 490.

These birds are plentiful in the Northern Territory, and many of their nests were found, but all in January, and the full clutch seems to be eleven eggs. They have a strong shell, when rubbed together sound like rough china, and are sharply compressed at the small end. Some are white, others greyish-white with very faint, fine markings of light brown, and others with the numerous freckles of a darker brown shade. The eggs of a clutch vary very little in size. The measurements given are of five eggs from five different clutches—A, 1.15 x .92; B, 1.08 x .88; C, 1.14 x .90; D, 1.16 x .91; E, 1.13 x .86 inches.

EXCALFACTORIA CHINENSIS, sub-species LINEATA (Chestnut-bellied Quail).

Cat. B. Brit. Mus., vol. xxii., p. 253; Gould's Handbook, vol. ii., p. 197, sp. 491.

Two nests of this bird, containing three eggs each, were found on 20th February and 7th May. The eggs are light olive-brown, thickly speckled with very dark olive-brown markings and light-coloured lines on, which look like scratches. The nest was a shallow hollow, lined with a small quantity of grass, alongside a tussock of grass. The eggs measure—(1) .93 x .76; (2) .95 x .75; (3) .93 x .76 inch.

TURNIX VELOX (Little Quail).

Cat. B. Brit. Mus., vol. xxii., p. 553; Gould's Handbook, vol. ii., p. 184, sp. 483.

These little birds seem very plentiful near Port Darwin, and many of their nests were discovered. Four eggs are the full clutch. They are slightly glossy, creamy-white in colour, and very thickly freckled with markings of olive-brown. Most of the eggs have larger markings also of very dark brown, almost black, most plentiful on the larger end. Four eggs out of four clutches measure—A, .88 x .76; B, .89 x .76; C, .88 x .74; D, .86 x .70 inch. Four clutches were found in January, one in April, and one in May.

POLIOLIMNAS CINEREUS (White-browed Crake).

Cat. B. Brit. Mus., vol. xxiii., p. 130; Gould's Handbook, vol. ii., p. 343, sp. 576.

These somewhat noisy birds are plentiful in parts of northern Australia, their nests being generally made of rushes or coarse herbage, lined with grass, and situated among swampy vegetation. The general clutch of eggs is four, but five are occasionally found. One clutch was taken in February, one in March, and four in May. They are greyish-white in colour, thickly freckled over with reddish-brown markings, slightly more plentiful at the larger end. A clutch of five measures—(1) 1.06 x .85; (2) 1.14 x .87; (3) 1.07 x .85; (4) 1.18 x .87; (5) 1.16 x .86 inches.

PORPHYRIO MELANONOTUS (Bald-Coot).

Cat. B. Brit. Mus., vol. xxiii., p. 205; Gould's Handbook, vol. ii., p. 321, sp. 563.

Many clutches of the eggs of this bird were found. The dates were in February, March, April, May, June, and July; but the nesting of these birds, as with other waterfowl in Australia, largely depends on a wet season. None of the nests contained more than four eggs, although they sometimes lay up to seven. The nests were built on the broken down reeds in swamps. The eggs are stone colour, boldly marked with blotches of reddish-brown, which are generally more or less longitudinal, from the larger to the smaller end, and a clutch of four measures—(1) 2.02 x 1.42; (2) 2.02 x 1.42; (3) 2.0 x 1.41; (4) 2.02 x 1.38 inches.

ANTIGONE AUSTRALASIANA (Crane or Native Companion).

Cat. B. Brit. Mus., vol. xxiii., p. 265; Gould's Handbook, vol. ii., p. 290, sp. 543.

The nests of these birds were found on raised knolls in shallow swamps, and were composed of coarse grass, sticks, and leaves, but sometimes hardly any nest is made. The shell of the eggs is much pitted, and dirty-white in colour, sparsely blotched with reddish or purplish-brown, most plentiful on the larger end; but several of them have no markings. The shells often have small limy nodules on their surface. The eggs measure—A, (1) 3.64 x 2.44, (2) 3.51 x 2.30; B, (1) 3.62 x 2.46, (2) 3.52 x 2.38 inches. The dates were—four clutches in March and one in June.

EUPODOTIS AUSTRALIS (Bustard or Wild Turkey).

Cat. B. Brit. Mus., vol. xxiii., p. 328; Gould's Handbook, vol. ii., p. 208, sp. 495.

It is seldom that these birds lay more than one egg; two are only occasionally found. They, as a rule, lay on the bare ground, without any nest, out on the plain. The shell is smooth in texture, but occasionally with limy nodules, and in colour olive, faintly marked longitudinally with olive-brown. Some

eggs are much lighter in colour than others. Two in the collection were found on the 7th and 29th of December respectively, and measure—A, 3.02 x 2.24 ; B, 3.02 x 2.08 inches.

HYDRALECTOR GALLINACEUS (Comb-crested Jacana, Parra).

Cat. B. Brit. Mus., vol. xxiv., p. 79 ; Gould's Handbook, vol. ii., p. 330, sp. 569.

This graceful bird seems very plentiful on the swamps of the Northern Territory, and many of their floating nests were found, being generally made of water plants. They are often placed on the broad leaves of a water lily, and are then exceedingly picturesque, with their handsome eggs. The dates on which eight clutches were found are—two in September and the rest in January. The eggs are very glossy, in colour yellowish-brown, curiously marked with black lines running thickly in all directions. The lines on some eggs are finer than on others. Two clutches of four measure—A, (1) 1.24 x .89, (2) 1.18 x .87, (3) 1.15 x .86, (4) 1.19 x .85 ; B, (1) 1.12 x .86, (2) 1.14 x .88, (3) 1.14 x .89, (4) 1.11 x .86 inches.

IBIS MOLUCCA (White Ibis).

Cat. B. Brit. Mus., vol. xxvi., p. 9 ; Gould's Handbook, vol. ii., p. 284, sp. 539.

These birds are exceedingly useful as insect-destroyers, and are found all over Australia. They live in flocks of various sizes, but when nesting many separate flocks congregate together in one place, sometimes to the number of many thousands. The nests are generally built on the broken-down rushes and bushes, which form a kind of platform over the water in a swamp. The clutch numbers either three or four ; occasionally five or six are laid, but very rarely. The eggs are white, with the shell finely pitted and coarse in texture, and measure—(1) 2.44 x 1.82 ; (2) 2.31 x 1.74 ; (3) 2.60 x 1.72 ; (4) 2.42 x 1.74 ; (5) 2.51 x 1.80 inches. The majority of the nests were found in April, and a few in June ; but the nesting of these birds depends almost entirely on the rains.

PLATIBIS FLAVIPES (Yellow-legged Spoonbill).

Cat. B. Brit. Mus., vol. xxvi., p. 51 ; Gould's Handbook, vol. ii., p. 288, sp. 542.

These birds build rather flat stick nests, generally high up in eucalyptus trees growing in swamps, and four eggs is the full clutch. The eggs are white and the shell pitted, and measure—(1) 2.62 x 1.78 ; (2) 2.54 x 1.78 ; (3) 2.60 x 1.68 ; (4) 2.68 x 1.79 inches. One clutch only was found, and that in May.

NOTOPHOYX PACIFICA (White-necked Heron).

Cat. B. Brit. Mus., vol. xxvi., p. 111 ; Gould's Handbook, vol. ii., p. 297, sp. 547.

These birds also generally build their stick nests in trees growing in swamps, and prefer to nest in company, several nests

being often found on one tree. The clutch consists of four delicately coloured bluish-green eggs. The shell is slightly glossy and pitted. They measure—(1) 2.17 x 1.50; (2) 2.09 x 1.49; (3) 2.05 x 1.45; (4) 2.09 x 1.48 inches. January.

DUPETOR GOULDI (Black Mangrove-Bittern).

Cat. B. Brit. Mus., vol. xxvi., p. 249; Gould's Handbook, vol. ii., p. 315, sp. 559.

Many of the flat stick nests of these birds were found among the mangroves growing on the banks of the tidal rivers, but none of the nests contained more than three eggs, although frequently four, or even five, are laid. They were found in January and February. The eggs are white, and measure—A, (1) 1.57 x 1.26, (2) 1.74 x 1.27, (3) 1.63 x 1.28; B, (1) 1.76 x 1.32, (2) 1.78 x 1.33 inches.

PHALACROCORAX SULCIROSTRIS (Little Black Cormorant).

Cat. B. Brit. Mus., vol. xxvi., p. 376; Gould's Handbook, vol. ii., p. 495, sp. 656.

These birds generally build in company, and frequently with the Little Cormorant (*P. melanoleucus*). Their somewhat bulky stick nests are frequently placed in comparatively low trees, growing in or near swamps, although occasionally they are over 60 feet from the ground; and I have seen as many as ten in one small tree. Several nests were found, all in May and June, and some contained four eggs, others three. The eggs are greenish-white, coated with lime somewhat irregularly, and measure—(1) 1.96 x 1.28; (2) 2.0 x 1.32; (3) 1.88 x 1.27; (4) 1.92 x 1.28 inches.

PHALACROCORAX MELANOLEUCUS (Little Cormorant).

Cat. B. Brit. Mus., vol. xxvi., p. 398; Gould's Handbook, vol. ii., p. 493, sp. 655.

Many of the nests of this species were found, all in May. The birds were breeding in company with the former species, and their nests are identical, as are practically the eggs, which are greenish-white, irregularly coated with lime. They measure—(1) 1.85 x 1.21; (2) 1.84 x 1.24; (3) 1.82 x 1.22; (4) 1.78 x 1.21 inches. The large majority of the nests contained four eggs, and only one five.

PLOTUS NOVÆ-HOLLANDIÆ (Darter).

Cat. B. Brit. Mus., vol. xxvi., p. 417; Gould's Handbook, vol. ii., p. 496, sp. 657.

These handsome birds construct their stick nests either over water or close to it. Eight of them were found with fresh eggs in May and June. The eggs are white, and covered irregularly with a limy coating, the shell underneath being greenish-white, and they measure—(1) 2.22 x 1.50; (2) 2.32 x 1.44; (3) 2.23 x 1.50; (4) 2.19 x 1.47 inches. The nests contained either three or four eggs each.

PODICEPS NOVÆ-HOLLANDIÆ (Black-throated Grebe).

Cat. B. Brit. Mus., vol. xxvi., p. 519; Gould's Handbook, vol. ii., p. 513, sp. 667.

Two floating nests of these birds were found, one on 24th March, and the other on 8th April, containing three and two eggs respectively. The nests were, as usual, built of green water weeds in a swamp, very little above the level of the water. The eggs are white when first laid, but soon become a kind of stone colour, being stained by the wet weed of which the nest is composed. They are elongated, and measure—(1) 1.50 x .91; (2) 1.38 x .92; (3) 1.39 x .95 inches.

ANSERANAS SEMIPALMATA (Pied Goose).

Cat. B. Brit. Mus., vol. xxvii., p. 44; Gould's Handbook, vol. ii., p. 352, sp. 579.

These birds are plentiful in the Northern Territory, where they have not been much disturbed by man, and many of their nests were found, generally situated on the masses of bulrushes that lie over and form a kind of platform above the water, the nests themselves being made of rushes and reeds. All the nests were found in March, and the average clutch numbered ten eggs. They are a light cream colour, slightly glossy and the shell pitted. The older birds seem to lay larger eggs than those breeding for the first time, and I now give the measurements of half a clutch of the older birds and also half a clutch of the younger ones:—Old—A, (1) 2.90 x 2.08, (2) 2.78 x 2.14, (3) 2.99 x 2.10, (4) 2.94 x 2.08, (5) 2.84 x 2.11 inches. Young—B, (1) 2.48 x 1.90, (2) 2.73 x 1.93, (3) 2.76 x 2.0, (4) 2.80 x 1.94, (5) 2.72 x 1.95 inches.

ANAS SUPERCILIOSA (Black Duck).

Cat. B. Brit. Mus., vol. xxvii., p. 206; Gould's Handbook, vol. ii., p. 363, sp. 585.

These well-known birds are also plentiful, and seem to build in various places—on the ground under shrubs, in hollows in trees, or in old Crows' nests. The number of the clutch varies from nine to twelve. The eggs are smooth, and of a greenish-cream colour, and a clutch of five measures—(1) 2.13 x 1.60; (2) 2.16 x 1.63; (3) 2.30 x 1.61; (4) 2.22 x 1.61; (5) 2.22 x 1.70 inches. By far the larger number of clutches were found in May, but a few in March and April.

A CORRESPONDENT, writing from Donnybrook, states that the Laughing Jackasses which were liberated there some time back have nested and have two young ones flying about with them. It is the same case a few miles further off, where a small colony of liberated Jackasses have established themselves, and are now surrounded by their small ones.—*West Australian*, 10/12/02.

Description of a New *Melithreptus* from Western Australia.

BY A. W. MILLIGAN, PERTH.

DURING an expedition undertaken by myself, in conjunction with Dr. Morrison, the Government Botanist, and Mr. Conigrave, of the Perth Museum, in the Stirling Ranges, in the south-east portion of this State, I shot three Honey-eaters in the flowering scrubs at the foot of Mount Mongerup. They appeared at first sight to be the Brown-headed Honey-eater, *Melithreptus brevirostris*, Vig. and Hors, although I perceived, as I thought, differences from that species.

On my return to Perth I borrowed from Mr. A. G. Campbell, Melbourne, a skin of *M. brevirostris* shot at Myrniong, in Victoria, and subsequent comparison with that bird and with the descriptions given by Gould and the British Museum Catalogue proved that my first perceptions were not altogether erroneous.

For the purposes of comparison it will perhaps be as well to give a specific description of three birds shot, and in which there is not any appreciable difference in any respect except that two were males, one a female. The description is as follows :—

Crown and sides of head blackish-grey—an occipital band from eye to eye, such band being distinct and white from eye to back of ear-covert, but only faintly perceptible, and impure white for the remainder. Below this band another parallel one, extending from ear-covert to ear-covert—the latter band being distinct and blackish-grey at beginning, but only faintly perceptible for the remainder; mantle, back, and upper tail coverts olive-yellow, like *M. chloropsis*, but with less yellow and not so intense; wings blackish-brown, edged with white; tail feathers blackish-brown externally washed with same colour as back; cheeks and sides of throat pure white, contrasting with blackish sides of head, and with the chin, middle of throat, and chest, which are respectively blackish, shading into ashy-grey; breast, abdomen, and under tail coverts a shade between cream and impure white, the colour deepening on abdomen and under tail coverts; axillaries and shoulder edges and remiges white, a little cream colour showing in places; bare spaces surrounding the eye a light orange colour, excepting lower portion of eyelid below the orange zone, which shows bluish-emerald; bill dark brown, legs and feet reddish orange. Total length, 5.25; wing, 2.7; tail, 2.0; tarsus, .65; culmen, .4.

The Victorian bird corresponded with the descriptions in the British Museum Catalogue, but not with the western species.

The specific differences between them, briefly summarized, are—(a) the new bird is less robust generally, and the bill in particular is shorter and more slender; (b) the bare spaces surrounding the eye are orange and bluish-emerald; (c) the

blackish chin is distinctly marked, as also the greyish breast; (d) the cheeks are white; and (e) the head is blackish brown.

I therefore assign to the new bird the scientific name of *Melithreptus leucogenys*, and the vernacular name of the Western Brown-headed Honey-eater.

Some Notes from the Geelong and Otway Districts.

BY H. E. HILL.

THESE notes have been made at odd times when I have been in this district during the last ten years. There will, therefore, be noticed numerous gaps—e.g., in the sea birds and water birds generally. But as I am not likely to add to them for a considerable time, it is perhaps as well to get them together in case there should be any items which may be of use to others. I have included all my notes made anywhere near Geelong, so that the ground covered includes a considerable part of the Otway Forest and a fairly large extent of the plains around Geelong. A complete census of the birds of the plains would number about 250, according to my own reckoning.

THE WEDGE-TAILED EAGLE (*Uroaëtus audax*).—Although common on the plains and in the forest country both, this bird is not very often seen within 10 miles of the town, but it does occur occasionally. A specimen was shot at the Corio Cricket Ground on 9th May last.

THE WHITE-BELLIED SEA-EAGLE (*Haliaëtus leucogaster*).—Occurs along the coast.

WHISTLING EAGLE (*Haliastur sphenurus*).—Rather uncommon.

BROWN HAWK (*Hieracidea orientalis*).—Fairly common.

KESTREL (*Cerchneis cenchroides*).—Common everywhere on the plains, but especially abundant on the edge of the Otways. Occasional in the more open parts of the forest itself, but never common. Breeding.

WHITE GOSHAWK (*Astur novæ-hollandiæ*).—Fairly common in the forest; rare on the plains.

GOSHAWK (*Astur approximans*).—Common on the plains.

SPARROW-HAWK (*Accipiter cirrhocephalus*).—Very rare.

HARRIER (*Circus gouldi*).—One of the Harriers is common throughout the plains, and probably both, but I have not identified the Spotted Harrier myself. *C. gouldi* breeds here.

LESSER MASKED OWL (*Strix delicatula*).—Occurs at long intervals.

BOOBOOK OWL (*Ninox boobook*).—Common in both the plains and forest country.

SPOTTED OWL (*Ninox maculata*).—Also occurs, but I do not know if it is common. I have only seen one or two.

OWLET NIGHTJAR (*Ægotheles novæ-hollandiæ*).—Not infrequent. Breeding.

FROGMOUTH (*Podargus strigoides*).—Common everywhere. Breeding.

SWALLOW (*Hirundo neoxena*).—Plentiful. 13/1/01, Spring Creek : Swallow's nest perched in a small hole right on seaward face of cliff. 16/1/01, Spring Creek : Two more Swallows' nests on cliff face, near Bird Rock.

FAIRY MARTIN (*Petrochelidon ariel*).—Very common in places—*e.g.*, at Connewarre Lakes and Dean's Marsh and along the Moorabool.

LAUGHING JACKASS (*Dacelo gigas*).—Very common both on the plains and in the forest. We one day noticed a couple of Jackasses in a tree on the River St. George—an old bird and a young one. The old bird would give a few notes, and then the young one would try its hand, but it invariably broke down after a couple of notes. The lesson went on for a considerable time.

SACRED KINGFISHER (*Halcyon sanctus*).—Not very common anywhere, but to be seen occasionally in any part.

BLUE KINGFISHER (*Alcyon azurea*).—Rare on the plains; common on all the creeks in the Ranges, particularly on the Barrum River at Apollo Bay.

WOOD-SWALLOW (*Artamus sordidus*); WHITE-BROWED WOOD-SWALLOW (*Artamus superciliosus*).—Both these Wood-Swallows are common enough at times. Breeding. 19/4/02 : Wood-Swallows flying so high overhead that I can only see them by the aid of the glass. Making due north. 20/4/02 : Heard more Wood-Swallows this morning, but could not see them without glass. At very great height, and making due north.

SPOTTED PARDALOTE (*Pardalotus punctatus*).—Common.

CROW-SHRIKE (*Strepera* — ?).—Very common in many parts of the forest, where it properly belongs, but an occasional bird is to be seen near Geelong. I have seen it at the Dog Rocks.

BLACK-BACKED MAGPIE (*Gymnorhina tibicen*).—Have seen a solitary specimen only in the district—at Mt. St. George, near Lorne.

WHITE-BACKED MAGPIE (*Gymnorhina leuconota*).—Very common outside of the forest, where it does not occur except at the mouths of the creeks. 29/7/93, Dog Rocks : Several nests built of fragments of boxthorn. 14/9/94 : Nest at Queen's Park. Cock bird attacked me as usual, and followed me about the park for a good hour, making occasional darts at my head. Noticed that he selected his time, and always attacked from behind. 18/5/02 : Two fowls quietly feeding in a paddock in Newtown. Suddenly two Magpies flew up, and as they made a simultaneous rush at one of the fowls, there was a puff of feathers as if the unfortunate bird had received a charge of shot. The hens made off at a great pace, pursued by one of the Magpies till they were right out of the paddock, when the victor strutted back, apparently very well pleased with himself.

BUTCHER-BIRD (*Cracticus destructor*).—Anywhere in the district.

MAGPIE LARK (*Grallina picata*).—Not common in the Otway, though it occurs on all the creeks; common everywhere else. Breeding.

BLACK-FACED CUCKOO-SHRIKE (*Graucalus melanops*).—Common on the plains.

WHITE-SHOULDERED CATERPILLAR-CATCHER (*Lalage tricolor*).—Common in parts. Have not seen it in the forest.

RUFIOUS-BREASTED THICKHEAD (*Pachycephala rufiventris*).—Not common. Except for one specimen from the You Yangs, I have only seen it on the Barwon and Moorabool.

HARMONIOUS THRUSH (*Collyriocincla harmonica*).—Common in the forest country; very common on the Moorabool. Breeding in the forest.

WHITE-SHAFTED FANTAIL (*Rhipidura albiscapa*).—Common generally, especially in the tea-tree scrub on the coast. Remarkably abundant at

Lorne, Apollo Bay, &c. Breeds everywhere. 8/1/94, St George: Nest with three eggs.

RUFIOUS FANTAIL (*Rhipidura rufifrons*).—Common in the Otways. Breeding. 3/1/96, St George: Nest with two eggs. I believe I have seen it on the Barwon, near Geelong, but I can find no mention of it in my notebook nearer than Dean's Marsh.

BLACK AND WHITE FANTAIL (*Rhipidura tricolor*).—Occurs in the ranges; common elsewhere.

RESTLESS FLYCATCHER (*Sisura inquieta*).—Occurs in the ranges; not uncommon elsewhere. Breeding.

SATIN FLYCATCHER (*Myiagra nitida*).—Have seen a few Satin Flycatchers near Lorne.

BROWN FLYCATCHER (*Micræca fascians*).—Common in all parts.

PINK-BREASTED ROBIN (*Petræca rhodinogastra*).—Abundant in parts of the Otways, as on the Upper Erskine. On the plains it is not to be seen except in the scrub near the coast, where it is plentiful.

ROSE-BREASTED ROBIN (*Petræca rosea*).—In the forest only. 29/12/95, Phantom Falls: Nest at end of thin dead bough of blackwood.

SCARLET-BREASTED ROBIN (*Petræca leggii*); FLAME-BREASTED ROBIN (*Petræca phænicea*).—Both occur in the forest, and both equally common in the rest of the district.

YELLOW-BREASTED ROBIN (*Eopsaltria australis*).—Common in the range country.

BLUE WREN (*Malurus cyaneus*).—Common, breeding everywhere; in immense numbers in the Otway. 18/1/99, Bambra: Nest with three set eggs.

RUFIOUS BRISTLE-BIRD (*Sphenura broadbenti*).—Very common throughout the Otways, but more so at some times than others. Very shy, and not often seen, though its peculiar and distinctive note is continually in evidence. I never but once saw one on the wing, when it flew across a little gully with a heavy, lumbering flight. Very active on the ground.

SPOTTED-THROATED SCRUB-WREN (*Sericornis ocellans*); WHITE-BROWED SCRUB-WREN (*Sericornis frontalis*).—Both of these birds are very abundant in the saltbush scrub wherever it is found, and throughout the forest they are thick in the undergrowth if it is at all dense. Have seen the nests of *S. frontalis* only, although the other species no doubt breeds here too.

BROWN TIT (*Acanthiza pusilla*).—Plentiful.

STRIATED TIT (*Acanthiza lineata*).—Have seen it in the ranges only.

YELLOW-RUMPED TIT (*Acanthiza chrysorrhoa*).—Very common everywhere. 2/1/96, St. George River: Old nest built among the roots beneath a hollow bank where the water had washed out a little cave.

WHITE-FRONTED CHAT (*Ephthianura albifrons*).—Plentiful all over the plains. 24/1/95: Nest with three eggs at Point Henry.

STRIATED FIELD-WREN (*Calamanthus fuliginosus*).—Plentiful wherever I have been. 7/1/99: Nest with three young birds in the lignum (*Muehlenbeckia cunninghami*), at the junction of the Moorabool and Barwon.

LITTLE FIELD-WREN (*Chthonicola sagittata*).—Breeds in the saltbush.

GROUND-LARK (*Anthus australis*).—Common everywhere on the plains; occurs in the open parts of the forest. 18/1/99, Bambra: Nest with three hard-set eggs.

BROWN SONG-LARK (*Cinclorhamphus cruralis*); RUFIOUS SONG-LARK (*Cinclorhamphus rufescens*).—*C. rufescens* certainly occurs, and probably *C. cruralis* also. One, at any rate, is plentiful.

GRASS-BIRD (*Megalurus gramineus*).—Very common in the saltbush scrub ; have not seen it often anywhere else.

REED-WARBLER (*Acrocephalus australis*).—Have seen it on the Barrum River only in the ranges ; common on the plains wherever there is water. 7/1/99, Queen's Park : 'Empty Reed-Birds' nests in great numbers in the reeds ; a green frog has taken possession of one. One nest with fresh eggs.

RED-BROWED FINCH (*Egitha temporalis*).—Everywhere. In immense numbers on all the creeks in the Otway, where it appears to be in the height of the breeding season at the end of December. 31/12/93 : One nest noted on 27/12/93 with three eggs now has four. 2/1/94, St. George : Nest with a spout at the entrance and a beautiful hood at the end of the spout. 7/1/94 : The young birds in a nest noted five days ago, then unfledged, can now fly pretty well. 8/1/94 : Nest with three fresh eggs.

SPOTTED GROUND-BIRD (*Cinclosoma punctatum*).—Believe I have seen this bird at the Dog Rocks.

GROUND-THRUSH (*Geocichla lunulata*).—Very common in the Otways.

SATIN-BIRD (*Ptilonorhynchus violaceus*).—Common in parts of the Otways.

CHOUGH (*Corcorax melanorhamphus*).—In considerable numbers in parts of the Otways. Seems to prefer the hill-tops. In fact, it seems a general rule in the forest that the larger birds keep to the hills and the smaller ones to the scrub in the gullies. I have never seen the Chough nearer Geelong than Spring Creek, though I am told that it is plentiful in parts.

APOSTLE-BIRD (*Struthidea cinerea*).—Mr. W. Shaw has in his collection an Apostle-Bird from this district.

RAVEN (*Corone australis*).—Common. Breeding. 23/1/01, Spring Creek : Very large flock, extending over a mile in length. I do not remember ever having seen a Raven or a Crow in the Otways.

BABBLER (*Pomatorhinus temporalis*).—Have seen this bird only on the flats from Bream Creek to Connewarre and Drysdale.

WHITE-BEARDED HONEY-EATER (*Meliornis nova-hollandiae*).—Common in many parts. Very common in gardens in town, where it breeds freely.

CRESCENT HONEY-EATER (*Meliornis australasiana*).—Not uncommon in the forest.

WHITE-EARED HONEY-EATER (*Ptilotis leucotis*).—Not uncommon in the forest. Nearer Geelong I have seen this bird about Drysdale only.

GRACEFUL HONEY-EATER (*Ptilotis ornata*).—Common round Geelong.

WHITE-PLUMED HONEY-EATER (*Ptilotis penicillata*).—Very common round Geelong. I believe that both *P. ornata* and *P. penicillata* are common in the ranges, but I have no mention of either of them in my notes.

YELLOW-FACED HONEY-EATER (*Ptilotis chrysops*).

SPINY-CHEEKED HONEY-EATER (*Acanthochara rufigularis*).—Have not seen it in the forest. Not very common anywhere. Breeding at Bream Creek.

WATTLE-BIRD (*Acanthochara carunculata*).—All over the district, but not common except in the more heavily timbered country. Very common in the Otways, but very local ; for instance, it was frequent on the Erskine but scarce on the St. George, though these two creeks are only a couple of miles apart.

SPINE-BILLED HONEY-EATER (*Acanthorhynchus tenuirostris*).—Not uncommon in the forest.

BLACK-CHINNED HONEY-EATER (*Helithreptus gularis*).—Have seen this bird on two occasions only, both at Bambra, near Dean's Marsh.

WHITE-NAPED HONEY-EATER (*Melithreptus lunulatus*).—Have not seen this bird on the plains. Out of the Otways I have only seen it once—near the Sheoak Falls, Letnbridge, where the Steiglitz Ranges begin.

MINER (*Manorhina garrula*).—Rare in the forest, common elsewhere. 18/9/93 : Nest on top of small nest (? Silver-eye), both new.

SILVER-EYE (*Zosterops caerulea*).—Very common everywhere, particularly where there is a little scrub, and in town gardens. 7/1/94 : St. George. Nest with three eggs.

BROWN TREE-CREEPER (*Climacteris scandens*).—Have seen it only on Sutherland's Creek and the Moorabool, where it is very common.

WHITE-THROATED TREE-CREEPER (*Climacteris leucophaea*).—Plentiful in the Otways.

ORANGE-WINGED TREE-RUNNER (*Sittella chrysoptera*).—In the Otway.

PALLID CUCKOO (*Cuculus pallidus*).—Common on the plains in the season.

FAN-TAILED CUCKOO (*Cacomantis flabelliformis*).—Common throughout the whole district in the season.

BRONZE CUCKOO (*Chalcococcyx plagosus*) ; NARROW-BILLED BRONZE CUCKOO (*Chalcococcyx basalis*).—Both very common on the plains. Breeding. 24/8/93, Dog Rocks : Nest of *Acanthiza chrysorrhoa* much broken at the mouth, containing one egg of the Tit and one of the Narrow-billed Bronze Cuckoo, a second Tit's egg lying broken on the ground beneath.

SULPHUR-CRESTED COCKATOO (*Cacatua galerita*).—Penetrates two or three miles into the forest from the north, but in other parts I have only seen a single bird—at the Phantom Falls. Occurs abundantly on the plains, especially at Dean's Marsh, where it is in very large numbers. Have only seen it near the town in the two following instances :—7/7/93 : Flock of 14 at Batesford. 12/8/93 : Flock of several hundreds at Pettavel Road.

CORELLA (*Licmetis nasica*).—This also occurs in immense numbers on the edge of the ranges, in company with the preceding species, but, like it, does not go far into the forest.

BLACK COCKATOO (*Calyptorhynchus funereus*).—Have never seen it out of the forest, where it is fairly common, although I believe an odd bird is to be seen at times flying across. Very shy, and hard to approach. Works great havoc among the dead trees, which it fairly tears to pieces in its search for the white wood grubs.

GANG-GANG COCKATOO (*Callocephalon galeatum*).—Very common in the Otways, where it breeds.

KING LORY (*Aprosmictus cyanopygius*).—Forest bird only.

PARRAKEET (*Platycercus elegans*).—Very common in most parts of the district. At Queen's Park there are always one or two small flocks of Red Lories in immature plumage, but, curiously enough, I have never seen an adult bird there. The forest Lories seem to have much richer plumage than those on the plains. Breeding.

ROSELLA (*Platycercus eximius*).—Very common everywhere on the plains, but not very common in the Otways. 10/4/98, Shelford : Two Rosellas having a bath in a pool of the river (Leigh). Seemed to be enjoying themselves immensely.

RED-RUMPED PARRAKEET (*Psephotus hamatonotus*).—Have only seen it near Shelford, where it is common.

"BLUE MOUNTAIN" (*Trichoglossus novæ-hollandiæ*).—Have seen a single specimen only, in the St George, near Lorne, though I believe it was once plentiful near Geelong.

MUSK LORIKEET (*Glossopsittacus concinnus*).—Plentiful enough at times in all parts, especially in the fruit season, but never in such numbers as in the north of the colony.

BRONZE-WING PIGEON (*Phaps chalcoptera*).—Not uncommon.

BRUSH BRONZE-WING (*Phaps elegans*).—Occurs in the Otways.

STUBBLE QUAIL (*Coturnix pectoralis*).—Common at times.

STONE PLOVER (*Burhinus grallarius*).—Have noted it near Lorne.

PIED OYSTER-CATCHER (*Haematopus longirostris*); BLACK OYSTER-CATCHER (*Haematopus unicolor*).—Both Oyster-catchers were noted at the River Aire by a friend of mine.

SPUR-WINGED PLOVER (*Lobivanellus lobatus*).—Common on the plains. 23/5/02, Ceres : Noticed a mob of Spur-wings with two sentries posted.

BLACK-BREASTED PLOVER (*Zonifer tricolor*).—Common on the plains.

LESSER GOLDEN PLOVER (*Charadrius dominicus*).—Have known of several. 20/1/99 : Saw one which had been shot at Point Henry.

ORIENTAL DOTTREL (*Ochthodromus veredus*).—Have seen it on the beach of Corio Bay.

BLACK-FRONTED DOTTREL (*Aegialitis melanops*).—Have only seen one myself near Geelong.

BANDED STILT (*Cladorhynchus leucocephalus*).—On the swamps.

SHARP-TAILED STINT (*Heteropygia acuminata*).—Common on the swamps.

CURLEW (*Numenius cyanopus*).—Common on parts of the coast, as at Barwon Heads.

LITTLE WHIMBREL (*Mesoscolopax minutus*).—Have seen a single specimen from Connewarre.

STRAW-NECKED IBIS (*Geronticus spinicollis*).—Occurs at times. Plentiful in May of the present year. Saw them at Ceres. Reported also from Batesford and Modewarre, and even from Prince's Bridge.

YELLOW-BILLED SPOONBILL (*Platalea flavipes*).—Common at the Connewarre Lakes.

WHITE-FRONTED HERON (*Ardea novæ-hollandiæ*).—7/2/94, Connewarre : Saw two mobs of Blue Cranes, one of 70 or 80 individuals and the other of about a dozen. Sailed home in the dark and for about a mile we kept startling the Cranes from the trees on the bank of the river. There seemed to be myriads of them, and they kept flying out with continual harsh cries.

NIGHT HERON (*Nycticorax caledonicus*).—Formerly common at Batesford. In fair numbers on lower Barwon.

BITTERN (*Botaurus poicilopterus*).—Connewarre, &c.

BALD-COOT (*Porphyrio melanonotus*).—Very abundant on the Barwon round Connewarre ; have also seen it higher up the river, at Ceres.

BLACK-TAILED NATIVE-HEN (*Microtribonyx ventralis*).—Connewarre.

BLACK MOOR-HEN (*Gallinula tenebrosa*).—Abundant at Connewarre. Have seen it at Ceres.

LAND RAIL (*Hypotaenidia philippinensis*).—Forest and plains.

BLACK SWAN (*Chenopsis atrata*).—Common on Corio Bay and at Connewarre and other suitable places. Occasionally on the creeks in the ranges. Mr. W. Shaw has in his collection a Black Swan of a beautiful fawn colour from Connewarre.

CAPE BARREN GOOSE (*Cercopsis novæ-hollandiæ*).—Connewarre.

MAGPIE GOOSE (*Anseranas semipalmata*).—On the Barwon and around the coast.

WOOD DUCK (*Chenonetta jubata*).—Connewarre.

MOUNTAIN DUCK (*Casarca tadernoides*).—River and lakes.

BLACK DUCK (*Anas superciliosa*).—River, lakes, bay, &c. Have seen a single specimen in the Otways, on the River Barrum.

MUSK DUCK (*Biziura lobata*).—Connewarre, Barwon, Corio Bay, &c.; also River St. George.

PACIFIC GULL (*Gabianus pacificus*).—Corio Bay.

SILVER GULL (*Larus novæ-hollandiæ*).—Lakes, bay, and coast generally.

FAIRY PRION (*Prion ariel*).—On the coast.

PELICAN (*Pelecanus conspicillatus*).—A mob is generally to be seen on the big lake at Connewarre, engaged in fishing, opposite Campbell's Point.

BLACK CORMORANT (*Phalacrocorax carbo*).—Common in suitable places through the entire district. A great number of them spend the day on the water near Point Henry, and towards sunset may be seen flying home in several large mobs to a favoured roosting-place in the Botanical Gardens. 10/1/96, St. George: Black Shag perched on tree. Suddenly appears a small dark Hawk (sp.?), which attacks him. In great agitation and with loud squawks the Cormorant flies off, with the Hawk in eager chase. But the Hawk catches sight of us here, and, to our sorrow, gives up the pursuit.

PIED CORMORANT (*Phalacrocorax hypoleucus*); WHITE-BREASTED CORMORANT (*Phalacrocorax gouldi*).—Both on the plains; the latter also in Corio Bay.

LITTLE BLACK CORMORANT (*Phalacrocorax sulcirostris*).—In all suitable places.

DARTER (*Plotus novæ-hollandiæ*).—Mr. W. Shaw has a Darter from Lake Connewarre in his collection.

GANNET (*Sula serrator*).—Corio Bay and outside coast. 31/8/93, Point Henry: Numbers of Gannets circling in the air over the bay. Every now and then one would shoot straight down into the water after a fish, sending the spray up round it to a height of several feet.

TIPPET GREBE (*Podiceps cristatus*).—Corio Bay.

DABCHICK (*Podiceps nestor*).—Corio Bay, Connewarre, Barwon, &c.

LITTLE PENGUIN (*Eudyptula minor*); FAIRY PENGUIN (*Eudyptula undina*).—Both of these birds occur abundantly in Corio Bay and on the coast outside, and their dead bodies are often to be found washed ashore.

List of Birds observed during Trip from Port Augusta (S.A.) to Yardea Telegraph Station, Gawler Ranges, in August, 1902.

BY (DR.) A. CHENERY, PORT AUGUSTA (S.A.)

IN regard to "geographical distribution" I beg to enclose list of birds observed on a recent trip made by Dr. A. M. Morgan, of Adelaide, and myself.

This list does not include a number of birds found in the vicinity of this town and in the Flinders Ranges. A complete

list of these will be forwarded next year, perhaps. Season's too dry for birds or collectors at present. We were too early for eggs, but found one clutch of *Ptilotis plumula* and *Phaps chalcoptera*.

Aquila audax	Calamanthus campestris
Haliastur sphenurus	Anthus australis
Hieracidea berigora	Taeniopygia castanotis
" occidentalis	Cinclosoma castanonotum
Podargus strigoides	Corcorax melanorhamphus
Hirundo neoxena	Corone australis
Petrochelidon nigricans	Corvus coronoides
Lagenoplastes ariel (nests only)	Pomatorhinus superciliosus
Cheramœca leucosternum	Glycyphila albifrons
Artamus sordidus	Ptilotis sonora
" melanops	" plumula
Pardalotus ornatus	" ornata
Strepera — (?)	Acanthogenys ruficularis
Gymnorhina tibicen	Acanthochaera carunculata
" leuconota	Melithreptus brevirostris
Cracticus destructor	Myzantha flavigula
Grallina picata	Dicaeum hirundinaceum
Graucalus melanops	Zosterops cœrulescens
Lalage tricolor	Climacteris rufa
Pachycephala rufiventris	" superciliosa
" gilberti	" scandens
Collyriocincla harmonica	Sittella pileata
" rufiventris	Cacomantis pallidus
Oreoica cristata	" flabelliformis
Sauloprocta motacilloides	Cacatua leadbeateri
Sisura inquieta	Platycercus zonarius
Microeca fascinans	Psephctus hæmatogaster
" assimilis	" multicolor
Smicromis brevirostris	Neophema elegans
Petrœca goodenovii	Glossopsittacus porphyrocephalus
Melanodryas bicolor	Phaps chalcoptera
Eopsaltria georgiana	Turnix velox (dried eggs only)
Malurus assimilis	Dromæus novæ-hollandiæ
" callainus	Eupodotis australis
" leucopterus	Burhinus grallarius
Amytis — (?)	Zonifer tricolor
Acanthiza uropygialis	Eudromias australis
" pyrrhopygia	Ægialitis ruficapilla
" tenuirostris	Anas gibberifrons
Geobasileus chrysorrhus	Spatula rhynchotis
Ephthianura albifrons	Chlamydochen jubata
" aurifrons	Podiceps nestor.
Xerophila leucopsis	
Pyrrhœmus brunneus	

Birds in the Launceston District.

BY FRANK M. LITTLER.

THIS list is by no means a complete one, the species mentioned being only those that have come under the immediate notice of the writer. Further down the Tamar, and outside what has

been termed the Launceston district, nearly all the species of river and lagoon-loving birds are to be met with.

HARRIER OR SWAMP-HAWK (*Circus assimilis*).—An occasional visitor about the river flats.

SPARROW-HAWK (*Accipiter cirrhocephalus*).—Fairly common.

LITTLE FALCON (*Falco lunulatus*).—Uncommon.

BROWN HAWK (*Hieracidea orientalis*).—A visitor.

SPOTTED OWL (*Ninox maculata*).—Scarce.

CHESTNUT-FACED OWL (*Strix castanops*).—Somewhat plentiful.

CROW (*Corvus coronoides*).—Very plentiful, especially in winter.

RAVEN (*Corone australis*).—The same remark applies to this species.

WHISTLING SHRIKE-THRUSH (*Collyriocincla rectirostris*).—Scarce.

SMALL-BILLED CUCKOO-SHRIKE (*Graucalus parvirostris*).—Rather plentiful in the surrounding bush.

DUSKY FANTAIL (*Rhipidura diemenensis*).—Frequents both the bush and suburban gardens.

LEADEN-COLOURED FLYCATCHER (*Myiagra rubecula*).—Rare.

SATIN FLYCATCHER (*Myiagra nitida*).—Not quite as rare as the previous species.

SCARLET-BREASTED ROBIN (*Petræca leggii*).—Comparatively common.

FLAME-BREASTED ROBIN (*Petræca phœnicea*).—A familiar species.

PINK-BREASTED ROBIN (*Petræca rhodinogastra*).—Somewhat plentiful.

DUSKY ROBIN (*Amavudryas (Petræca) vittata*).—Not very common.

LONG-TAILED WREN (*Malurus gouldi*).—A plentiful species in field and garden.

REED-WARBLER (*Acrocephalus australis*).—Numerous in the reeds fringing the river's banks.

GRASS-BIRD (*Megalurus gramineus*).—Rather rare.

BROWN-RUMPED TIT (*Acanthiza diemenensis*).—Not common.

YELLOW-RUMPED TIT (*Acanthiza chrysorrhoa*).—Very plentiful, especially in the fields during winter.

SCRUB-TIT (*Acanthornis magna*).—Scarce.

BROWN SCRUB-WREN (*Sericornis humilis*).—Frequents the scrubbiest parts.

STRIATED FIELD-WREN (*Calamanthus fuliginosus*).—Uncommon.

WHITE-FRONTED BUSH-CHAT (*Ephthianura albifrons*).—Has increased greatly the past year or two.

LESSER WHITE-BACKED MAGPIE (*Gymnorhina hyperleuca*).—A very familiar species everywhere.

GREY-TAILED THICKHEAD (*Pachycephala glaucura*).—Scarce.

OLIVE THICKHEAD (*Pachycephala olivacea*).—Somewhat rare.

WHITE-EYE (*Zosterops caerulea*).—Widely distributed.

SPINE-BILL (*Acanthorhynchus tenuirostris*).—Commonest in winter in suburban gardens.

STRONG-BILLED HONEY-EATER (*Melithreptus validirostris*).—Scarce.

BLACK-HEADED HONEY-EATER (*Melithreptus melanocephalus*).—Rather uncommon.

- FULVOUS-FRONTED HONEY-EATER (*Glycyphila fulvifrons*).—Fairly plentiful.
- YELLOW-THROATED HONEY-EATER (*Ptilotis flavigularis*).—Somewhat rare.
- MINER (*Myzantha (Manorhina) garrula*).—Plentiful in parts.
- YELLOW WATTLE-BIRD (*Acanthockæra inauris*).—A stray visitor.
- YELLOW-TIPPED PARDALOTE (*Pardalotus affinis*).—Comparatively common.
- SPOTTED PARDALOTE (*Pardalotus punctatus*).—Scarce.
- FORTY-SPOTTED PARDALOTE (*Pardalotus quadragintus*).—Fairly plentiful.
- SWALLOW (*Hirundo neoxena*).—Nests under every available verandah in city and suburbs.
- TREE MARTIN (*Petrochelidon nigricans*).—An infrequent visitor.
- GROUND-LARK (*Anthus australis*).—To be seen in every field.
- WOOD-SWALLOW (*Artamus sordidus*).—Breeds in the surrounding bush.
- FIRE-TAILED FINCH (*Zonæginthus bellus*).—Somewhat scarce.
- WHITE-RUMPED SWIFT (*Micropus pacificus*).—A rare visitor, in company with the Spine-tailed Swift.
- SPINE-TAILED SWIFT (*Chætura caudacuta*).—Arrives in large flocks during the summer and early autumn.
- TAWNY FROGMOUTH (*Podargus strigoides*).—Uncommon.
- PALLID CUCKOO (*Cuculus pallidus*).—Not plentiful.
- FAN-TAILED CUCKOO (*Cacomantis flabelliformis*).—The commonest of the cuckoos.
- NARROW-BILLED BRONZE CUCKOO (*Chalcococcyx basalis*).—Rare.
- BRONZE CUCKOO (*Chalcococcyx plagosus*).—A few visit the district.
- MUSK LORIKEET (*Glossopsittacus concinnus*).—Large flocks are in the habit of visiting the district.
- BLACK COCKATOO (*Calyptorhynchus funereus*).—Stray individuals occasionally put in an appearance, especially during stormy weather.
- ROSELLA (*Platycercus eximius*).—Fairly plentiful.
- SWIFT LORIKEET (*Nanodes discolor*).—Somewhat scarce.
- GROUND PARRAKEET (*Pezoporus formosus*).—Uncommon.
- BRONZE-WINGED PIGEON (*Phaps chalcoptera*).—A chance visitor.
- STUBBLE QUAIL (*Coturnix pectoralis*).—Comparatively plentiful in some parts.
- BROWN QUAIL (*Synæcus australis*).—Not as plentiful as the preceding species.
- NATIVE-HEN (*Tribonyx mortieri*).—Fairly plentiful.
- BALD-COOT (*Porphyrio melanonotus*).—Somewhat scarce.
- COOT (*Fulica australis*).—Rare.
- SPUR-WINGED PLOVER (*Lobivanellus lobatus*).—Occasionally very plentiful ; at other times scarce.
- BLACK-BREASTED PLOVER (*Zonifer tricolor*).—A chance visitor.
- SILVER GULL (*Larus novæ-hollandiæ*).—Always present in large numbers on the mud flats laid bare by the ebbing tide in the River Tamar.
- BLACK CORMORANT (*Phalacrocorax carbo*).—Fairly plentiful, more so lower down the river.
- WHITE-BREASTED CORMORANT (*Phalacrocorax gouldi*).—Not quite as familiar as the preceding species.

LITTLE CORMORANT (*Phalacrocorax melanoleucus*).—Rather scarce.

BLACK-THROATED GREBE (*Podiceps nova-hollandiæ*).—Uncommon.

HOARY-HEADED GREBE (*Podiceps poliocephalus*).—More in evidence than the above species.

SHIELDRAKE OR MOUNTAIN DUCK (*Casarca tadernoides*).—An occasional visitor.

BLACK DUCK (*Anas superciliosa*).—At certain seasons very numerous.

TEAL (*Nettion castaneum*).—Occasionally visits in considerable numbers.

PINK-EARED DUCK (WIDGEON) (*Malachorhynchus membranaceus*).—An infrequent visitor.

BLUE-BILLED DUCK (*Erismatura australis*).—At certain seasons of the year not uncommon.

Notes and Observations from the Launceston District to 30th June, 1902.

BY FRANK M. LITTLER, LAUNCESTON.

1902.—May 5.—An occasional Welcome Swallow (*Hirundo neoxena*) is still to be seen on the southern outskirts of the district.

May 14.—On several moonlight nights recently I have heard flocks of Plover passing overhead, seemingly some considerable distance up. From their cries I would say they were Spur-winged Plover (*Lobivanellus lobatus*).

May 24.—Observed a male Long-tailed Blue Wren (*Malurus gouldi*) still in full summer plumage by the rifle butts, to the east of the district. All other males of this species I have seen have long since assumed their winter coat.

May 25.—Counted a flock numbering 47 Lesser White-backed Magpies (*Gymnorhina hyperleuca*) feeding on the ground in a small paddock not far from the house. Such a flock is most unusual.

May 30.—This is the first autumn in which the Spine-tailed Swifts (*Chaetura caudacuta*) have been so scarce round about this district. Usually numbers are to be seen nearly every evening towards the end of summer, either wheeling high in the air or skimming close along the ground very swiftly. The occasions on which I have observed them this autumn have been few and far between. I can only remember having seen one really large flock; among it were a number of White-rumped Swifts (*Micropus pacificus*), whose forms I could readily distinguish as they dashed close by.

June 3.—Observed a Fan-tailed Cuckoo (*Cacomantis flabelliformis*) in the bush towards the southern outskirts of the district. As this is the second autumn in which I have observed this species after all the other migrants had long since departed for warmer climes, I am of opinion that certain individuals of this species, at least, must be in the habit of wintering here.

June 8.—Observed a flock of some twenty or thirty White-fronted Bush-Chats (*Epthianura albifrons*) feeding in a field in South Launceston. When disturbed they flew some distance, uttering sharp cries. This is the first occasion on which I have either seen or heard of so many individuals of this species being so close to the city.

Also observed a small flock of Ground-Larks (*Anthus australis*) feeding close by. It is somewhat unusual for this species to be in the vicinity at this time of the year. A Yellow-rumped Tit (*Acanthiza chrysorrhoa*) was seen

carrying food in its bill into a large conifer, presumably for its young. As the tree was on the other side of a fence in private grounds I was unable to investigate the matter. This species was exceptionally plentiful in the fields about this portion of the district.

June 25.—Observed a large flock of Silver Gulls (*Larus nova-hollandiæ*) passing over Launceston in a north-westerly direction towards the sea. In all probability they were returning from feeding at some temporary lagoon formed by the late heavy rains. During some winters it is no uncommon sight to see large flocks, often numbering several hundred birds, of this species passing up the valley of the North Esk as far as St. Leonards, on the south-east limits of the district, where they, in company with Crows (*Corvus coronoides*), Ravens (*Corone australis*), and Magpies (*Gymnorhina hyperleuca*), feed all day long in the flooded paddocks. Towards dusk they take flight, and either pass over Launceston or return the way they came, taking a short cut to the lower reaches of the Tamar. The distance from the open sea to the feeding grounds is about 46 miles.

Stray Feathers.

WESTERN AUSTRALIAN NOTES.—*Hirundo neoxena*.—A brood was raised under the North Perth Ferry jetty during winter. The young birds were flying about and resting on the hand-rails of the jetty, and on board the ferry boats in last week in June.

Cuculus pallidus.—Noted first arrival 5th July, following some heavy gales. Simultaneously great numbers of hairy caterpillars made their appearance in the bush land and gardens.

Zosterops gouldi.—Obtained a nest containing two eggs at Greenmount, Darling Ranges, near Perth, on 30th August. Saw another nest on 7th September, at South Perth, containing one egg.

Glycyphila fulvifrons.—Captured one of two young ones at Greenmount on 30th August. The fulvous front and black chest lines were not apparent.

Meliornis longirostris.—Discovered nest at South Perth on 1st September; no eggs. Two days later visited nest, found two eggs.

Pardalotus striatus.—Saw fully-fledged young in old "red gum," South Perth, 1st September.

Ptilotis sonora.—Last month (August) saw a Singing Honey-eater fly on to the road, Mends-street, South Perth, and pick at a piece of orange peel, after the manner of a sparrow.—ALEX. WM. MILLIGAN. Perth, 9/9/02.

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LAUGHING JACKASSES IN THE WEST.—The Jackasses (*Dacelo gigas*) turned out here are thriving and breeding well, especially about the cultivated districts.—ERNEST A. LE SOUËF, Perth.

ROCKHAMPTON NOTES.—No part of Australia has suffered more from the drought of the last three years than Central Queensland, and among all classes of birds the distress and mortality have been unprecedented. Bushmen on downs and timbered country report finding the dead bodies of common kinds. There has been some difference of opinion as to whether the deaths were due to starvation or to eating poisoned food laid out as baits for 'possums. Some, perhaps, died from the latter cause, but out on runs where no baits were placed this could not have been the case. There was a terrible want of food, because the pastures were completely burned up, and in many places trees which had attained to a considerable size perished for want of rain. Insect food there was none, and honey-bearing blossoms were few and far between. Lagoons and waterholes were dried, especially in the western country, and a migration of birds to the coast country took place. Wild Turkeys were most conspicuous, and were shot on sight. Quail took refuge in some of the Keppel Isles, but were followed and shot without mercy. As the waterholes decreased in number those remaining were the resort of wild animals and pot-hunters. Scrub Turkeys (*Talegallus*) and Duck became common in Rockhampton shops. Wild Geese, Teal, Pigmy Geese, Cranes, Stone Curlews, Plovers, &c., were deemed fair game by the unemployed. There are really few birds left, those who could, while they had strength, having moved to happier quarters. There are a few Kites about the meat works, and White-breasted and White-headed Sea-Eagles appear, soaring over the River Fitzroy. Crows are numerous in the outskirts of Rockhampton, and are very impudent. A few Black-faced Cuckoo-Shrikes remain. The Pied Crow-Shrike came here in June, and a few are still here; it is a winter visitor. Laughing Jackasses are in diminished numbers. The Magpie Larks or "Pi-wis" are about as usual, only there seems to be a predominance of males. Bee-eaters are very sore on bees—there is little else for them. Butcher-Birds polished off an incredible number of canaries hanging in cages on verandahs; now the latter have to be protected by close wire-netting apart from the cage. A few House Martins remain. Diamond-Birds, Honey-eaters, and Finches are rarely to be seen. The lagoon at Gracemere station, four miles or so from Rockhampton, is a wild bird reserve, and is well frequented, though the water is only a couple of feet deep. I send two photo. snapshots of Pelicans taken from a boat. The birds of all kinds are very tame there.—WILL. McILWRAITH. 5/9/02.

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MALE LYRE-BIRD INCUBATING.—On 28th August, when in a fern gully at Gembrook, I found the nest of a Lyre-Bird (*Menura victoriae*) in the steep bank of the creek, and the male

bird was sitting on the egg, the hen bird being nowhere in sight; and on two other occasions this season I have heard of male birds being disturbed off the nest; in most of the nests I have before found it was the female sitting, but we now see that both parents assist in the incubation.—D. LE SOUËF.

* * *

GROUND-LARKS IN TASMANIA.—I have watched the movements of Ground-Larks (*Anthus australis*) for two successive seasons, and find they arrived here on 25th August of the year 1901, and 20th August, 1902, respectively, and generally commence to breed about the beginning of October. They leave this locality again about the first week in April the following autumn. Is this movement only local, or do these birds migrate to the mainland of Australia?

It is quite noticeable the scarcity of some of our common birds this spring, and also the lateness in arrival of some of the migrating kinds. For instance, the Satin Flycatcher (*Myiagra nitida*) and the Wood-Swallow (*Artamus sordidus*) were quite a month late in putting in an appearance.—E. W. DEAN. Stirling, Tasmania, 5/11/02.

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NOTABLE MIGRATION OF NATIVE COMPANIONS.—On 12th June Mr. A. C. Frankham, of Adelaide, when driving from Balranald to Swan Hill, Victoria, noticed large numbers of flights of Native Companions (*Grus australasianus*) travelling in a south-westerly direction, at a good height above the ground, and each flock preserved a distinct V formation; he first noticed the birds in the middle of the afternoon, and from then until sundown there was hardly a time when one or more flocks were not visible. It is curious that such numbers of these birds should be migrating towards the lakes at the mouth of the Murray at the same time. Of course, the drought was the cause of their travelling southward, but that would hardly account for them going simultaneously.—D. LE SOUËF.

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CAIRNS NOTES.—15/9/02.—The season promises to be a good one for birds in this district, owing principally, I believe, to the fearful drought prevailing in other parts of the State. The Calornis has been back several weeks, and yesterday I noticed them very busy building in their usual haunts. The Nutmeg Pigeons (*Myristicivora spilorrhoea*) are also coming down the coast in goodly flocks, and already I hear of several projected murdering expeditions to the neighbouring islands.

8/10/02.—The dates in Mr. Le Souëf's paper in last number of *The Emu* bear out what I have observed, that there are individuals of some species breeding in North Queensland the whole year round. Going carefully into the dates one notices that December and January are the main breeding months. A

sudden drop is noted in February and March, probably because of the very heavy rains during those months. April, May, and June show a revival of activity, which almost dies out in July and August, to come again in September, increasing in October and November. . . . I would like to see our Union do something for the preservation of the Nutmeg Pigeon. To my mind the whole of the Family Islands should be proclaimed a permanent reserve, so that the Pigeons could breed undisturbed. Some of the islands are visited every season by shooting parties from Townsville, Cardwell, &c.* As for the Cassowary, I fear he is doomed. He cannot live away from the jungle, and gradually but surely his haunts are becoming narrower and narrower. Sugar, bananas, and corn must occupy the land, and the lovely scrub must go. I very much fear that in another ten years the Cassowary will be a rare bird indeed. . . . We have had a very dry time here lately—not a drop of rain for six or seven weeks—and the consequence is the vegetation is scorched up, and bush fires are burning in every direction. To one who has lived for years in a dry climate like Townsville the rapid effect of a little drought here is most marked. Vegetation is so pampered usually with rain and humidity in these localities, that it cannot survive even a few weeks' dry weather.—E. M. CORNWALL.

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THE NUTMEG PIGEONS.—I am glad the Aust. O.U. Council are taking action *re* the Nutmeg Pigeons, and trust their efforts will bear fruit. Shooting during September, October, and even the early part of November, does little harm, as the birds do not as a rule settle down to breeding in any numbers until after that time, and so are not on the islands in any numbers during the day. Just before sunset they begin to arrive from their feeding grounds on the mainland, and the flight is continuous until nearly dark. As soon as day breaks they begin to stir again, and soon after sunrise the main flocks have left, only odd ones who have started breeding extra early remaining. The shooting is thus limited to a very short period during the morning and evening, and does comparatively little harm. Later on—that is, after the middle of November and through December and January—it is quite a different matter. The birds are then breeding in countless thousands on these very limited areas; every bush and tree bear their burden of nests, and many eggs are laid on rocks or even on the bare ground. Then there are hundreds of birds on the islands all day long. Eggs and young birds are destroyed wantonly, and thousands of birds shot which are never used, simply because they go bad before they reach the pot. Some years ago Green Island, which lies a few miles outside Cairns, was a favourite haunt of the Pigeons, but the

* The Council of the Union have already taken action in this matter.—EDS.

shooters were too much for them, and now only a few pairs visit it during the season.—E. M. CORNWALL. Cairns, 5/11/02.

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SOME NOVEMBER NOTES.—About Melbourne, this season is marked by the scarcity of migratory birds. In early spring the Cuckoos, of three species, arrived, though very few in numbers; but they all seem to have passed on, and the familiar whistle of the Pallid Cuckoo (*Cuculus pallidus*) and the high notes of the two species of *Chalcococcyx* are seldom or never heard. Two other species, however, *Cacomantis flabelliformis* and *C. variolosus*, are not so scarce in certain localities. They are, strictly speaking, mere local species, and I believe often stay the whole winter with us. The Reed-Warbler (*Acrocephalus australis*) appeared in the willows and sedges along the Yarra during the third week in September—about its usual time; while for quite two months, until about 20th November, when presumably they left for some breeding haunt, a party of silvery-plumaged Marsh Terns (*Hydrochelidon hybrida*) were daily to be seen flying up and down the reaches of the river about Burnley. This is a species never before noted in this locality, and surely these beautiful birds must be among the starvers driven by the drought from the northern part of the State. Some of their companions in their inland quarters, the White-headed Stilt (*Himantopus leucocephalus*) and the Marsh Tringa (*Heteropygia acuminata*), now on its winter holiday in the Southern Hemisphere, are also to be found not far away, on lagoons near Werribee. Of the Wood-Swallow (*Artamus sordidus*) very few pairs are to be seen in the timber around Melbourne; both the wandering species, however, *A. personatus* and *A. superciliosus*, have been noted passing overhead. The Sacred Kingfisher (*Halcyon sanctus*), always a familiar bird, is, strange to say, almost absent this year, only two or three being noted, and they did not arrive till the last week of October. The Oriole (*Oriolus viridis*), whose distinctive notes are usually to be heard in the secluded areas of box-tree, has not appeared at all this season; neither has the rowdy Caterpillar-catcher (*Lalage tricolor*), though its larger relative, *Edoliisoma tenuirostre*, may be noted on the wooded saddles of the Dandenongs. One fine afternoon a trip was made to a creek running out of the western side of these ranges, where the rare and beautiful Honey-eater (*Ptilotus cassadix*) used to have its home; but though this was not seen, another species, unfamiliar in the country near Melbourne, the Bell Miner (*Manorhina melanophrys*) was identified. The clear, bell-like notes of the male are frequently answered by a chuckling call from the female. Near by, a Tasmanian Finch (*Zonæginthus bellus*), rare on the mainland, was seen carrying long pieces of grass to its bulky nest, high up in a bunch of mistletoe on a tall eucalyptus sapling. Several trips were made to some

gullies on the opposite or eastern end of the Dandenong Ranges, and there some charming glimpses were obtained of the bird inhabitants of these humid and ferny recesses in the mountain side. In spite of the raging bush fires of six years ago, which must have destroyed bird life on an alarming scale, it was pleasing to find that such unique birds as the Lyre-Bird (*Menura victoriae*) and the Pilot-Bird (*Pycnoptilus floccosus*) were still at home in these fast-disappearing retreats. At more than one spot were the strong-throated and peculiar calls of the male Lyre-bird noticed. One place in particular, where the bird was whistling alongside a noisy waterfall, offered an opportunity to creep up and see the antics of the shy performer; but so keen is its sense of sight as well as of hearing that the venture was not a success, and the bird was found surveying the intruder—only for a moment, however, for it turned and disappeared like magic along a log. Young birds in rusty-coloured plumage and the females are not so shy, for offspring and parent were seen one evening quietly walking along a beaten track, and at another place were discovered going to roost, just one hour after sundown, in a tall blackwood (acacia) tree. This they ascended by walking measuredly along one branch and hopping to another until they felt themselves high enough to be safe from their enemy the fox. The Pilot-Bird, rowdy, active, and yet shy, is one of the remarkable small forms of Victoria. It appears to be somewhat irregular in its nesting habits. Though birds have been seen feeding fledged young during the first week in November, yet eggs have been taken at the end of January. Besides the Rufous Fantail (*Rhipidura rufifrons*), which can usually be found during the breeding season frequenting the shady gullies or offshoots, where it builds its neat nest overhanging the water, on a dead twig, there are two species of Robins, which can always be seen during a ramble in a fern gully, and without which no description of the inhabitants of such a cool retreat would be complete. Particularly is the *Petroica rosea* associated with the shady patches of musk-tree and blackwood. The other species, *P. phoenicea*, is, properly speaking, Tasmanian. It is the common Robin about the city in winter, but when in September the greater number congregate and migrate across Bass Strait to nest in Tasmania and the adjacent islands it was thought that all had left. But of late years it was found that a few pairs retire to the highlands of the Dividing Range and its spurs, and there rear their young, as proof that all the species do not migrate. These birds, though they are found nesting in the more open eucalypts near the crests of the saddles, generally are found feeding among the fern trees. The smaller Rose-breasted Robin, however, is rarely found outside the gully, where it rears its young in the cosiest of nests, built of green moss, lined with fern down and fur, and ornamented with bits of lichen, placed on a horizontal bough, or, perchance, in an upright fork, near the stream. The nest itself

vies in excellence with the naturally moss-bedecked and lichen-covered boughs of the tree in which it is placed, and perhaps not very far away is found growing the somewhat rare tree-orchid (*Sarcochilus parviflorus*), emitting a delicate fragrance from its small flowers. (See illustration.) The Rose-breasted Robin, hereabouts at least, is the chief foster-parent of the Square-tailed Cuckoo (*C. variolosus*), whose egg, a little larger but with markings remarkably similar to those of the Robin's, has been several times taken from this beautiful, cosy nest, with two eggs only of the foster-parent. From observations it appears that the Cuckoo's egg is deposited after or previous to the first of the Robin's, and the owner of the nest then lays only one other egg to bring the clutch to the full number of three. Further, it was noticed in one favourable instance that the Cuckoo's egg was the first to hatch, when the two eggs of the Robin, though advanced in incubation, were immediately thrown out. Further, it seems that one pair of birds is doomed for some time at least to be the foster-parents for a certain pair of Cuckoos, which undoubtedly watch the nest after their egg is deposited, for should the contents be taken they deposit a second egg in the second nest the Robins usually build. It has yet to be discovered whether it is parent or foster-parent which turns out the rightful eggs when the little stranger is hatched.—A. G. CAMPBELL, Melbourne.

From Magazines, &c.

IN the *Proceedings of the Linnean Society of New South Wales*, part i. (1902), p. 75, Mr. A. J. North, C.M.Z.S., points out that the synonymy of *Eopsaltria georgiana* and *E. gularis*, both of Quoy and Gaimard, has become transposed. He states :—"In his 'Handbook' (vol. i., p. 294) Gould erroneously placed *Muscicapa georgiana*, Quoy and Gaimard, as a synonym of his *Eopsaltria griseogularis*, and also erred in placing *Muscicapa gularis*, Quoy and Gaimard, as a synonym of *Eopsaltria leucogaster*, Gould. Dr. Gadow (*Cat. Birds Brit. Mus.*, vol. viii., p. 178) has similarly confused the synonymy of the two species, and he erroneously describes *Eopsaltria gularis* under the name of *Eopsaltria georgiana*, and the latter species under the name of the former."

Mr. North has thus verified the nomenclature of these species as given in Dr. E. P. Ramsay's "Tabular List of Australian Birds," p. 7 (1888).

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OUR venerable field naturalist and collector, Mr. Kendall Broadbent, has contributed to *The Ibis* (July) "Field Notes on the Birds of Bellenden-Ker." Bellenden-Ker is the highest mountain (5,500 feet) in Queensland. Mr. Broadbent has

enumerated 64 species, with brief but interesting remarks. No doubt the number would have been greater had the trip not been in winter time—June to August (1889). Moreover, rain and mist were great hindrances to collecting work. The paper is unique from the fact that Mr. Broadbent was the discoverer (either on this excursion or on previous ones to other parts of Queensland) of many of the species named. Mr. Broadbent mentions finding *Platycercus elegans* (Gm.) at a height of 5,200 feet. May the Parrakeet not have been the variety *P. e. nigrescens*, Ramsay?

Mr. Broadbent's list of 79 species originally appeared in a report addressed to the Trustees of the Brisbane Museum, under date 4th October, 1889. The birds enumerated were collected by an expedition under the leadership of Mr. Meston.

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In the *Victorian Naturalist*, vol. xix., No. 7 (Nov., 1902), Mr. A. J. North, of the Australian Museum, has described three new species of Australian birds, namely:—*Rhipidura intermedia*—habitat, North-Eastern Queensland; *Calamanthus albiloris*—habitat, Victoria; and *Amytis modesta*—habitat, Central and South Australia and New South Wales. No doubt he has good grounds for separating the species named.

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SEXING BIRDS.—Without pretending that the rule given is infallible, Mr. W. T. Greene, in a recent number of the *Avicultural Magazine*, puts forward the following as a method of distinguishing the sexes of birds—often a difficult problem:—“If the bird is placed on the left palm, with its head away from the observer, the feathers on the breast will, if the bird is a female, part readily, leaving a bare space, varying in width, with the breast-bone for its centre; if, on the contrary, the bird is a male, the feathers will not divide in the same even manner, but will be found growing, more or less closely, over the whole surface, even over the edge, or margin, of the breast-bone or keel.” Do the observations of Australasian ornithologists bear out this theory?

* * *

IS MALURUS CYANEUS POLYGAMOUS?—In the September number of the *Avicultural Magazine* Mr. Reginald Phillips describes how a pair of these birds bred in his aviary in England. After some descriptive notes, he says:—“This morning (26th July) I was paying a stealthy visit to the food corner of my reserved aviary, and was trying to localize certain baby voices which have become rather pronounced . . . when my eye lighted on a long, thin cane, fixed horizontally high up in the aviary, on which was glued, in the sun and quite

in the open, a tiny mite of a light-brown colour. . . . The young bird was a very fair reproduction of the mother, with a shorter, but by no means short, tail. It was fully feathered, and seemed in perfect health and condition." Mr. Phillips questions whether this species is polygamous, an opinion which has been formed by many ornithologists from the fact that in a wild state each male is usually accompanied by a small flock of females. He justifies his doubt thus:—"So far as my own three adults are concerned, the evidence points directly to an opposite conclusion. The two birds which constitute the pair have always been dead against the odd female, and to their persecutions and her loneliness I have attributed her uneasiness. She behaves like a female who is in search of a mate, or at any rate of a quiet home. I feel inclined to suggest that the males, owing to their brilliant plumage, are killed off, leaving a large surplus of soberly-clad females, who follow each male about in little flocks . . . for the sake of companionship." The odd female was so worried by the two who had paired that she was afraid to remain in the aviary.

* * *

REARING AUSTRALIAN PARROTS IN ENGLAND.—Recent numbers of the *Avicultural Magazine* contain interesting notes on the rearing of Australian birds in captivity. In the June issue is recorded how the Swainson or Blue-bellied Lorikeet (*Trichoglossus novæ-hollandiæ*) reared a brood at the Blackpool Museum. In a footnote to the article, which deals also with the questions of plumage and size of the sexes, the editor adds—"We believe that the extent of the red on the breast depends entirely upon *age*, and *not sex*." The Rev. C. D. Farrar tells in the August number of the great difficulty he had in procuring and keeping a pair of Many-coloured Parrakeets (*Psephotus multicolor*), and the anxiety he felt until early in February of 1902 the hen disappeared into a log. The eggs then laid proved to be infertile, but a second clutch followed, and early in June the first Many-colour born in the British Isles was well on the wing. Mr. Farrar says of this young bird:—"I never saw a youngster that could fly so swiftly and well. . . . Many young Parrakeets go back to sleep in the nest for quite a long time. This one never did. The reason may have been that the hen went to nest again about a week before it came out, and she is now sitting steadily on a *third* batch. In the second batch there were three eggs, two clear and one youngster. The young one is a hen. . . . I have just (1st July) been looking at the young Many-colour. She is about three-quarters of the size of the parents." In the September number Mrs. Johnstone chronicles the successful rearing of Barnard Parrakeet (Mallee Parrot—*Barnardius barnardi*) thus:—"The morning on which I believe the young hatched (7th May) there was a sharp frost,

and ice on birds' drinking water, storms of hail and sleet, and a north-west wind. On 19th June, a fine, bright morning, after some wet, cold weather, the first young Barnard appeared. He was seen clinging to the top of the wire-netting in the aviary, perfectly motionless. As far as I could see from a distance he was a dull edition of the old birds. . . . The next day another appeared, exactly like the first, perhaps a shade brighter in colouring, and he took up his position next to the first, at the top of the aviary, clinging with his beak, and quite motionless."

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THE SMUTTY PARRAKEET.—In some notes accompanying a fine coloured plate of this Parrakeet (*Platycercus browni*, Temm.), in the *Avicultural Magazine* for August, Mr. D. Seth-Smith, F.Z.S., says there are perhaps half a dozen pairs of these birds in Great Britain. The first he saw were exhibited in November, 1899, and soon after two pairs were deposited at the London Zoo. "I have not found this species delicate, although it inhabits a hot region." Mr. Seth-Smith has often seen his pair (from which living specimens Mr. Goodchild prepared the drawing for the plate) examining nest boxes, so there seems a probability of their breeding in captivity, or, at all events, that eggs will be laid.

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OUR FINCHES IN BRITAIN.—Concerning the Australian Chestnut-eared Finch (*Teniopygia castanotis*), which is amongst those commonly kept in Europe, in a letter from Mr. D. Seth-Smith, F.Z.S. (*Avic. Mag.*, vol. viii., p. 234), the following interesting item is given:—"A brood of seven young Zebra Finches recently left the nest in my aviary, some coming out several days before the others. I was much interested, on 15th June, to see some of the elder young ones, still with black bills, and only very recently able to feed themselves, feeding their younger brothers and sisters as they clamoured for food, exactly as the parents fed them. I watched them doing so several times." On p. 239 of the same magazine, a brief note from Mrs. Howard Williams records the rearing of a brood of Ringed Finches (*Stictoptera annulosa*), a postscript notifying the arrival of a second brood. A subsequent article (p. 264) on the subject says that two pairs were purchased in January, and some time afterwards one was observed to be nesting. The first young left the nest on 29th May. "There were three of them, one much larger than the others. In appearance they were very much like their parents, but much lighter, especially the wings and tail, and the dark shading at the top of the beak was hardly noticeable. In one important point, however, they were entirely different. Seen full face they were absolutely ringless, and their breasts were pure white. In profile they showed the beginning

of the upper ring which encircled the face." At nine weeks old they seemed to be moulting, and the parents appeared to be nesting again. Red and Black Gouldians, Banded, Zebras, Waxbills, and Crimson are amongst the Australian Finches given in lists of birds in aviaries, and another familiar small bird, the Zosterops, is also cited.

* * *

EMUS.—From Snowtown (S.A.) comes a record concerning a pair of Emus kept in a yard 100 ft. x 30 ft. A little over a year ago the hen laid 36 eggs, which were taken from the birds. This year the laying consisted of 25 eggs, nine of which were allowed to remain in the nest. After 56 days of sitting by the male bird, seven chicks were hatched, two of which died. There are now (8th October) five fine, healthy birds three weeks old, and with appetites of an extraordinary character. The old birds, usually quite tame, are quite jealous of their offspring.

The South Australian Ornithological Association.

THE ordinary meeting of this Association was held at the residence of Dr. A. M. Morgan on the evening of 5th September, when Mr. M. Symonds Clark presided. The chief business of the evening was an interesting account, given by Dr. Morgan, of an extended trip, in company with Dr. A. Chenery, of Port Augusta, into the northern parts of Eyre Peninsula for the purpose of investigating bird life in that dry region. The trip was commenced in the early part of August. Setting out from Port Augusta a course was directed westward along the Gawler Ranges to Corunna station, and thence a north-westerly course was steered to the southern shores of Lake Gairdner. This lake was found to consist merely of salt formations, the water having disappeared. Next the outlying station of Yardea was struck, and several directions from this centre were explored, including Lake Acraman in the north. Much of the time of the party had to be spent in searching for fresh water, the absence of which on more than one occasion caused them considerable anxiety, not to mention inconvenience. Notwithstanding the dryness of the country, 77 species of birds were identified. Among those collected were the new "Tit," recently named by Mr. A. H. C. Zietz (*Acanthiza tenuirostris*), a Field-Wren (*Calamanthus campestris*?), and a specimen of the Grass-Wren (*Amytis*); White-browed Tree-Creeper (*Climacteris superciliosus*), Chestnut-backed Ground-Bird (*Cinclosoma castaneonotum*), the Red-throat (*Pyrholaemus brunneus*), Chestnut-rumped Tit (*Acanthiza uropygialis*), Buff-bellied Shrike-Thrush (*Collyriocincla rufiventris*), and the Red-throated Thickhead (*Pachycephala gilberti*). Dr. Morgan has donated the birds collected to the Adelaide Museum. Other interesting exhibits were shown during the meeting.

Another ordinary meeting was held at the residence of Dr. A. M. Morgan, Adelaide, on the evening of the 7th November, when Mr. M. Symonds Clark presided. There was a fair attendance. It was decided that delegates from the Association should attend the second congress and camp-out excursion of the Aust. O.U. Several photographs of the Tawny-shouldered Frog-mouth or Podargus were shown, one by Dr. A. M. Morgan, obtained by him near Laura, while the Secretary showed a good picture of this bird

taken by the Conservator of Forests (Mr. W. Gill) in the forest reserve near to Millicent. Mr. M. Symonds Clark tabled the first volume of *The Emu*, the organ of the Australasian Ornithologists' Union. The rest of the evening was spent in discussing the habits and breeding of various birds in and around Adelaide. Messrs. A. H. and R. Zeitz reported that a number of native birds were now to be seen on the Torrens Lake accompanied by their young, thus showing that when protection was afforded they would breed within city bounds.

ABOUT MUTTON-BIRDS.—This season seems to be specially favourable for Mutton-Birds, as I never remember seeing them in such vast numbers, and in so many different places before. On Sunday, 28th September, on the passage from Hobart to Melbourne, I observed in the vicinity of Eddystone Point myriads of the birds about 3 or 4 miles off the land. There was a heavy N.E. swell, and large quantities of kelp on the surface of the water, which had probably been uprooted during the previous heavy gales. The birds appeared to be intently searching for food, and it is quite possible they may have found some small crustaceans, &c., among the kelp. But it was on our return trip from Melbourne, on the 2nd October, that by far the greatest numbers I have ever seen were observed. So great were the numbers that they attracted the attention of many members of the crew. For two hours, from 5.30 a.m. to 7.30 a.m., we were passing through them. The vessel at the time was steaming about 13 knots an hour, which is equal to about 15 statute miles, so that we passed through a continuous mass of them for 30 miles. Their general motion was flying round in a circular manner, but proceeding at the same time to the N.W. At times numbers of them would settle on the water so thickly as to completely blacken it, giving it the appearance of a reef of black rocks. After 8 a.m. there were none to be seen, but about 3.15 p.m., after passing through Banks Strait, we began to observe stragglers, and they gradually increased in numbers as we approached Eddystone Point. They were close above the water, appeared to be searching for food, and making their way, at the same time, towards the islands of the Furneaux Group. They were probably the returning numbers of those who had gone to the southward searching for food, while those we met in the morning had taken an almost contrary direction to their feeding grounds. The Mutton-Birds have a peculiar motion in their flight; they never appear very high above the water, and flap their wings rapidly half a dozen times or so, and then stop and balance themselves with the momentum they have acquired, again repeating the flapping movement.—(CAPT.) WILLIAM WALLER, s.s. *Westralia*, 1st November, 1902.

Nest of the Masked Owl.

THE nest-hole of the Masked Owl (*Strix novæ-hollandiæ*), contained one fledgling, and fortunately (or perhaps unfortunately) nearly three-quarters of the empty shell, just sufficient to determine breadth, colour, surface, &c., exactly, and the length by approximation and analogy. Particulars are as follow:—

Date, 20th December, 1902. Site, &c., an old redgum (*E. rostrata*); entrance to nest about 45 feet up; hole 8 inches across by 18 inches long. Under the lower rim of the hole, about 6 inches down, was a picked-out platform, worn smooth where the young rested when waiting for food, thus doing away with the need of the parents entering each time. Floor of the nest about 4 feet down, in which were found bones and feathers of parrots. In one corner were the three-quarter shell and some of the remaining fragments.

Colour of Egg—Beautiful pearly white, with here and there some heaping-up of the lime salts of the shell. Slight lustre and smooth fairly even surface and fine texture. Shape—Rounded, but a little less so than that of Owls' eggs generally.

Dimensions—*Breadth*, 1 inch 5 lines, or almost 1½ inches. *Length* (ascertained approximately by drawing in the missing portion in a carefully measured copy of the existing portion on paper), nearly 2 inches.

Only one parent bird flew from the nest, and a search failed to discover the other in the vicinity.—(DR.) ERNEST A. D'OMBRAIN. Casterton, Victoria, 23/12/02.

Editorial Note.

UNTIL there be published a "Check List" of Australian birds, which the Aust. O.U.^a has in view in the near future, members and contributors are invited to use as far as possible, the nomenclature in the Australasian Science Association's List (1898). This will greatly aid the editors when revising the MSS. Moreover, it is obvious that if authors use their own favourite or local names, some little confusion may ensue, not to mention the discount in value of important notes by the use of obsolete names.

Advertisement.

A WIDOW of an ornithologist has a case of mounted Australian Quails to dispose of. It consists of 12 birds of various species besides a pair of Snipe, and can be had for less than half its intrinsic value—a rare chance for collectors or others.—Apply to the editor of this Journal.

The Emu

Official Organ of the Australasian Ornithologists' Union.

"Birds of a feather."

VOL. II.]

1ST APRIL, 1903.

[PART 4.

Australasian Ornithologists' Union.

REPORT FOR 1901-2.

(Adopted at the Melbourne Congress, 19th November, 1902.)

THE Aust. O.U. has now passed through the first year of its existence, and its work has gone steadily on. The number of its members has increased, not only in Australasia, but also in other countries. Its official journal, *The Emu*, has maintained a high standard, in every way worthy of the Union, and is now in much request by working ornithologists of other countries. There has been no lack of interesting matter, but it will be difficult to increase its size with the present subscription. The coloured figure fund has been fairly subscribed to, and it is expected that a coloured plate will shortly appear.

The Union has established observatory stations throughout the States, and the results of their observations will be published half-yearly in *The Emu*, and should be very interesting, especially as throwing some light on the migration of various species.

Action has been taken regarding the better protection of the Egrets in Victoria, which are so largely shot for the sake of their feathers, known to the trade as Osprey plumes, and the Council are glad to say that the Government has now protected them for the whole year.

Suggestions have also been made by the Union to the Government of Queensland as to the advisability of reserving certain islands off the coast of that State, with the view of protecting the Nutmeg or Torres Strait Pigeon from destruction. At present, although protected during the nesting season, these Pigeons are frequently destroyed by shooting parties visiting the islands where they have congregated for the purpose of nesting.

In making certain alterations in the Game Laws of the State of Victoria by the Government, the suggestions of the Union have all been carried out, but it is difficult to protect Quail in Victoria, so as to satisfy everyone, as the birds apparently

migrate from the more northern districts before the open season commences.

The Union is also endeavouring to have Lake Moodemere, Wahgunyah, still maintained as a breeding reserve for wild fowl, as so few of these places are left in Victoria.

A letter has also been written to the Government of Tasmania, asking that every effort be made to prevent the destruction of the eggs of the Cape Barren Geese, which breed on certain islands in Bass Strait, and it would be a great pity if this fine bird were exterminated. Unfortunately, the result was hardly as satisfactory as desired. The Tasmanian authorities were assured by those deputed to inquire into the matter that no destruction had taken place; but the mere fact of inquiry having been made will render residents on the islands more cautious as to what birds they destroy.

One of the Council was enabled to visit the rookeries of Short-tailed Petrels, or Mutton-Birds, on Phillip Island. He wrote an interesting and valuable report of his visit, and, at the instigation of the Union, the Government have preserved certain rookeries that were nearly destroyed, and regulated the taking of the eggs and young of these birds, as they are a valuable source of food supply, and one does not wish to see them ruthlessly destroyed.

Efforts have also been made to have, as far as possible, poisoned pollard and grain laid for rabbits covered over lightly with soil, as it does not prevent the rodents from getting it, but is not so liable to be eaten by birds.*

Copies of the *Game Acts* of the various States have been obtained, with a view of making them coincide as far as possible.

The Council would urge all members of the Union to make notes of anything that may be of interest regarding bird life, however simple it may be, and forward them to the editors of *The Emu*.

For the Council,

D. LE SOUËF, *Hon. Sec.*

BALANCE-SHEET, 1901-02 (30TH JUNE).

RECEIPTS.				
Subscriptions, Current Year, and Poundage ...	£103	13	1	
Subscriptions in Advance, and Poundage ...	22	15	0	
	<hr/>			£126 8 1
Donations to Coloured Figure Fund ...	...	...	...	2 18 8
By Sale of <i>Emu</i> ...	...	...	...	2 16 8
By Advertisements in <i>Emu</i> ...	...	...	...	4 0 0
	<hr/>			<u>£136 3 5</u>

* The report of Mr. F. E. Allan, officer in charge of these operations, in answer to this, asserts there is small danger to birds from this source; but this assertion is hardly borne out by observed facts.

EXPENDITURE.

Printing of <i>Emu</i>	£59	16	6	
General Expenses (as per Invoices)	23	2	2	
	<hr/>			£82 18 8
By Bank Balance				53 4 9
				<hr/>
				£136 3 5

Audited and found correct.

M. SYMONDS CLARK, }
EDWIN ASHBY, } *Auditors.*

12/8/1902.

ROBT. HALL, *Hon. Treasurer.*

The Protection of Native Birds.

(With Comparative Statement showing Close Seasons in
Respective States.)

BY A. J. CAMPBELL.

(Read before Aust. O.U., Melbourne Congress, 21st November, 1902.)

WHEN I addressed my paper on this subject to the first Congress of the Australasian Association for the Advancement of Science, 1888, and made use of the expression, "the question of the protection of our native birds adds another string to the bow of Federation," I little thought that the Commonwealth was so near, or the establishment of an Australasian Ornithologists' Union.

The burden of my paper 14 years ago was based on a tabulated statement showing the close season for indigenous birds in the respective colonies (now States), with suggestions for removing anomalies and assimilating the "close" periods for certain species in neighbouring States.

By a strange coincidence, since then all the *Game Acts* have been amended (with the exception of that of Queensland), and the schedules of the protected birds remodelled. The various Acts, as they now stand, applied to birds are :—

Queensland, *Native Bird Protection Act* 1877 (41 Victoria, No. 7); amended 1884. New South Wales, *Birds Protection Act* 1901 (1 Edward VII., No. 26). Victoria, *Game Act* 1890 (54 Victoria, No. 1095). South Australia, *The Birds Protection Act* 1900 (63 and 64 Victoria, No. 745). Western Australia, *The Game Act* 1892 (55 Victoria, No. 36); amended 1900. Tasmania, *The Game Protection Act* 1895 (59 Victoria, No. 26); amended 1896.

All these Acts are excellent machinery, which have only to be intelligently administered and intelligently observed by the peoples in order to give our "feathered friends" a fair measure of protection. Nevertheless, I think there is still room for improvement in some of the attendant schedules, at all events,

and I venture to believe it is part of the work and duty of a national organisation like the Australasian Ornithologists' Union to make suggestions. Hence, by way of commencement, this paper and tabulated statement up to date are humbly submitted.

I apprehend the statement will be referred to a committee. But in the meantime I may be permitted to make a few remarks as examples of some suggested improvements.

Egrets are not yet protected either in New South Wales or Western Australia. The plumes of these birds are much sought after as articles of adornment, and the traffic should be suppressed. It has come to the knowledge of some of the members of this Union that not many seasons ago, in Riverina, a rookery of these beautiful birds was destroyed by nearly all the birds being shot, and the balance driven away in consequence, and that, too, *in the breeding season*.

Babblers (Pomatorhini).—These birds are valuable insect-destroyers. When not molested they have been known to enter orchards and devour the larvæ of the dreaded codlin moth. They are not protected in New South Wales.

Cape Barren Geese.—Although protected in the States interested, the protection does not adequately cover the laying season.

Emus.—Three States protect this noble bird the "whole year." The States which do not are New South Wales and South Australia. It may be worth their while coming into line, and then there would be no excuse for the traffic in Emu-eggs in any part of Australia, because all the Acts provide a penalty not only for taking eggs but *having eggs in possession* of protected birds.

Owls, Frogmouths (Podargi), and Nightjars.—New South Wales and Western Australia should afford protection to such useful destroyers of nocturnal vermin.

Ibises are wholly protected throughout Australia except New South Wales, where the season is only partial.

Lyre-Birds.—The close season in Queensland and New South Wales does not cover the laying season.

Plovers.—Western Australia is the only State that does not protect these economic and ornamental birds.

Wild Ducks.—If South Australia would terminate its close season on the 31st January instead of 20th December the whole of south-eastern Australia would be brought into line in favour of this much-sought-after tribe.

Mutton-Birds (Puffins).—Western Australia has a close season which is obviously wrong in its duration. Tasmania, by sections 16 and 17 of Act No. 26 (1895), possesses special machinery for the protection of Mutton-Birds within its boundaries, which include all the principal islands in Bass Strait. It is a question whether that machinery should not be more extensively used than it is now.

Pittas.—Should New South Wales not protect these beautiful birds the “whole year,” instead of a portion only, as Queensland does?

Rifle-Birds.—As I pointed out in my paper to the A.A.A.S., these glorious birds might be wholly protected in lieu of the present short season.

Sea Birds.—Western Australia protects certain kinds whose habitat extends over the greater part of two or three oceans. This seems a waste of legislative energy when more local and land species require immediate attention.

In conclusion, I may mention that some of the States do not possess machinery for proclaiming reserves for birds. It would be well if those which do not could be induced to do so. I would even go further, and appoint rangers, honorary and otherwise, because preserves are of little use without caretakers.

NOTE.—Since compiling the accompanying statement, I find by various “Proclamations” that the close season for certain species in New South Wales varies with the locality—a kind of “movable feast” for the birds, but which must be exceedingly perplexing to sportsmen and others.

For Brush Turkey, Mallee Fowl, Bittern, Land Rail, Black Swan, Wild Turkey, Wild Ducks (including Teal), Plovers (every species), Pigeons and Doves, and Wild Geese, in the electoral districts of Monara, Tumut, the Hume, Albury, Wagga Wagga, the Murrumbidgee, the Murray, Hay, Deniliquin, the Lachlan, Grenfell, Condobolin, Ashburnham, and Gundagai, and the table-land of Eden-Bombala, the close season is from 21st June to 21st December.

In the counties of Beresford, Wallace, and Wellesley, from 8th August to 1st February.

In the police district of Coonamble, from 20th July to 20th December.

In the district of Thackaringa, from 8th August to 20th December.

In the police districts of Tenterfield and Warialda, from 1st July to 31st December.

In the district of Wilcannia, from 1st October to 1st April.

In the district of Balranald, from 21st June to 21st December.

In the police district of Grafton, from 1st August to 31st March.

In the police districts of Richmond River and Murwillumbah, from 1st September to 30th April.

In the police district of Dungog, from 1st September to 31st May.

Statement showing the Close Seasons for Indigenous Birds under the "Game Acts" of the respective States.

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A. J. CAMPBELL, *The Protection of Native Birds.*

[Emu
1st April

Name or Family of Birds.	Queensland (according to District).*	New South Wales.†	Victoria.	South Australia (including North- ern Territory).	Western Australia.	Tasmania.
Acanthizæ or Tits (all species) ...	1 Sept.-31 Mar., or 1 Nov.-30 April	...	Whole year	Whole year	...	Whole year
All Birds known as Cranes or Herons other than Egrets	Whole year	Nankeen Crane 1 Aug.-31 Jan.	1 Aug.-20 Dec.	"	...	...
Apostle-Bird or Grey Jumper	1 Sept.-31 Mar., or 1 Nov.-30 April	1 Aug.-31 Jan.	...	1 July-20 Dec.	...	...
Avocet and Stilts	...	...	1 Aug.-20 Dec.	"	Stilts 1 July-30 Nov.	...
Babblers (all species) ...	1 Sept.-31 Mar., or 1 Nov.-30 April	...	Whole year	"	...	...
Bee-eater ...	"	...	"	"	...	...
Bell-Bird (Oreocica) ...	...	...	...	Whole year	...	...
Bitterns ...	1 Sept.-31 Mar., or 1 Nov.-30 April	1 Aug.-31 Jan.	1 Aug.-20 Dec.	"	Whole year	...
Black Cockatoos	Whole year	"	"	1 July-20 Dec.	...	...
Black Swan ...	1 Sept.-31 Mar., or 1 Nov.-30 April	"	14 June-20 Dec.	1 June-20 Dec.	Whole year	1 July-31 Jan.
Bower-Birds ...	1 Sept.-31 Mar., or 1 Nov.-30 April	Regent-Bird 1 Aug.-31 Jan.	"	Whole year	...	...
Bustard or Wild Turkey	"	"	Whole year	1 Aug.-20 Dec.	1 July-30 Nov.	...
Butcher-Bird and all small Crow-Shrikes	"	Butcher-Bird 1 Aug.-31 Jan.	...	Whole year	...	...
Cape Barren Goose ...	...	...	14 June-20 Dec.	"	1 July-30 Nov.	1 July-31 Jan.

* See Notes, page 194.

† See page 189.

Cassowary	...	Whole year	...	...	...	...
Caterpillar-catchers	...	1 Sept.-31 Mar., or 1 Nov.-30 April	Whole year	Whole year	...	...
Coachwhip-Bird	...	1 Aug.-31 Jan.	"	"	...	...
Coucal (Swamp Pheasant)	...	1 Aug.-31 Jan.	Whole year	1 July-20 Dec.	...	...
Cuckoos (all species)	...	"	Whole year	Whole year	Whole year	Whole year
Cuckoo-Shrikes (Graucali)	...	1 Sept.-31 Mar., or 1 Nov.-30 April	1 Aug.-20 Dec.	"	...	"
Curllews	...	"	...	1 July-20 Dec.	1 June-30 Sept.	...
Diamond-Birds (Pardalotes)	...	"	...	Whole year	Whole year	Whole year
Dollar-Bird (Roller)	...	1 Aug.-31 Jan.	"	1 July-20 Dec.	...	...
Dottrels	...	1 Sept.-31 Mar., or 1 Nov.-30 April	Whole year	"	...	...
Egrets or White Cranes	...	Whole year	Whole year	Whole year	...	...
Emus	...	1 Aug.-31 Jan.	"	1 June-20 Dec.	Whole year	...
Ephthianuras or Chats	...	1 Sept.-31 Mar., or 1 Nov.-30 April	"	Whole year	...	Whole year
Fantails and Flycatchers	...	1 Aug.-31 Jan.	"	"	Black and White Fantail whole year	"
Finches	...	Diamond Sparrow 1 Aug.-31 Jan.	...	1 July-20 Dec.	...	"
Frigate-Bird	...	"	...	"	1 June-30 Sept.	...
Frogmouths or Pordargi	...	Whole year	Whole year	Whole year	Whole year	Whole year
Gang-Gang Cockatoo	...	1 Aug.-31 Jan.	1 Aug.-20 Dec.	...	...	...
Gannets (Booby)	...	...	...	1 July-20 Dec.	1 June-30 Sept.	...

STATEMENT SHOWING CLOSE SEASONS FOR INDIGENOUS BIRDS—*continued.*

Name or Family of Birds.	Queensland (according to District).*	New South Wales.†	Victoria.	South Australia (including North- ern Territory).	Western Australia.	Tasmania.
Great Kingfisher or Laughing Jackass	Whole year	1 Aug.—31 Jan.	Whole year	Whole year	Whole year	...
Ground-Bird (Cinclosoma)	...	...	...	1 July—20 Dec.	...	Whole year
Hawks	Kestrel, Kite, whole year. Brown Hawks 1 Sept.—30 April	Fish Hawks 1 Aug.—31 Jan.	...	...	...	...
Honey-eaters	Whole year	3 species 1 Aug.—31 Jan.	...	Except Wattle-Bird 1 July—20 Dec. Whole year	Wattle-Bird whole year	Whole year except Wattle-Birds 1 Aug.—23 May
Ibises	"	"	Whole year	Whole year	Straw-necked Ibis whole year	...
Kingfishers other than the Great	"	"	1 Aug.—20 Dec.	"	...	Whole year
Larks (all species)	"	"	Whole year	"	...	"
Land Rail and other members of the Rail Family—Coots, &c.	1 Sept.—31 Mar., or 1 Nov.—30 April	Land Rail 1 Aug.— 31 Jan.	1 Aug.—20 Dec.	1 July—20 Dec.	Bald-Coot 1 July—30 Nov.	...
Lyre-Birds	"	1 Aug.—31 Jan.	Whole year	...	...	...
Magpies	Whole year	"	1 Aug.—20 Dec.	Whole year	Whole year	Whole year
Magpie Lark (Pied Grallina)	"	"	Whole year	"	...	...
Mallee Hen	...	"	"	1 July—20 Dec.	1 July—30 Nov.	...
Mutton-Birds (Puffinus)	...	"	...	"	1 June—30 Sept.	...

* See Notes, page 194.

† See page 189.

Native Companion or Australian Crane	1 Sept.-31 Mar., or 1 Nov.-30 April	1 Aug.-31 Jan.	1 Aug.-20 Dec.	1 July-20 Dec.	...	Whole year
Nightjars ...	Whole year	...	Whole year	Whole year	...	Whole year
Owls ...	...	...	"	"	...	"
Oyster-catchers ...	...	...	...	1 July-20 Dec.	1 June-30 Sept.	...
Parrots ...	Grass Parrakeets whole year	King, &c., 1 Aug.-31 Jan.	...	Except Rosellas 1 July-20 Dec. Pelican only	...	...
Pelican and Cormorants ...	...	...	...	...	1 June-30 Sept.	...
Pied or Semipalmated Goose	1 Sept.-31 Mar., or 1 Nov.-30 April	1 Aug.-31 Jan.	14 June-20 Dec.	1 June-20 Dec.	1 July-30 Nov.	...
Pittas ...	Whole year	...	...	1 July-20 Dec.	...	...
Quails (all species) ...	1 Nov.-31 May	1 Oct.-31 Mar.	1 Aug.-31 Mar.	"	1 July-30 Nov.	1 July-30 April
Plovers (all species) other than the Stone Plover or "Curlew"	1 Sept.-31 Mar., or 1 Nov.-30 April	1 Aug.-31 Jan.	1 Aug.-20 Dec.	1 June-20 Dec.	...	1 July-31 Jan.
Rifle-Birds ...	" "	"	...	...	...	...
Robins (all species) ...	Whole year	1 Aug.-31 Jan.	Whole year	Whole year	Scarlet-breasted Robin whole year	Whole year
Seagulls ...	...	"	...	"	...	"
Scrub Turkey and Scrub Fowl	1 Sept.-31 Mar., or 1 Nov.-30 April	Scrub Turkey 1 Aug.-31 Jan.	...	Scrub Fowl 1 July-20 Dec. Whole year	...	...
Shrike-Tit ...	" "	...	Whole year	...	...	...
Sittellas or Tree-Runners ...	" "	...	"	1 July-20 Dec.	...	...
Spoonbills ...	Whole year	...	...	Whole year	...	...
Stone Plover or "Curlew" ...	"	1 Aug.-31 Jan.	Whole year	"	...	1 July-31 Jan.

Name or Family of Birds.	Queensland (according to Districts). ^a	New South Wales. [†]	Victoria.	South Australia (including North- ern Territory).	Western Australia.	Tasmania.
Swallows and Martins	Whole year	1 Aug.-31 Jan.	Whole year	Whole year	...	Whole year
Swamp or Ground Parrakeet	...	...	1 Aug.-20 Dec.	1 July-20 Dec.	...	...
Swifts	1 Sept.-31 Mar., or 1 Nov.-30 April	...	...	Whole year	...	Whole year
Terns	...	...	...	"	Noddies 1 June-30 Sept.	...
Thrushes (all species)	1 Sept.-31 Mar., or 1 Nov.-30 April	Grey Thrush 1 Aug.-31 Jan.	Whole year	"	...	Whole year
Thickheads (all species)	"	...	1 Aug.-20 Dec.	"	...	"
Tree-Creepers	Whole year	...	Whole year	"	...	...
Waders, All	1 Sept.-31 Mar., or 1 Nov.-30 April	...	...	1 July-20 Dec.	...	...
Warblers and Wrens	1 Sept.-31 Mar., or 1 Nov.-30 April	Blue and Emu Wrens 1 Aug.- 31 Jan.	Whole year	Whole year	...	Whole year
White-eyes (Zosterops)	Wrens whole year 1 Sept.-31 Mar., or 1 Nov.-30 April	...	...	...	...	"
Wild Geese, other	"	1 Aug.-31 Jan.	...	1 June-20 Dec.	1 July-30 Nov.	...
Wild Ducks (all species), including Teal	"	"	1 Aug.-31 Jan.	1 Aug.-20 Dec.	1 July-31 Dec.	1 July-31 Jan.
Wild Pigeons and Doves (all species)	Pigeons 1 Sept.-30 Ap. Doves whole year	"	1 Aug.-31 Mar.	1 July-20 Dec.	1 July-30 Nov.	Bronzewings 1 Aug.-last day Feb
Wood Duck or Maned Goose	1 Sept.-31 Mar., or 1 Nov.-30 April	"	1 Aug.-31 Jan.	1 June-20 Dec.	1 July-31 Dec.	1 July-31 Jan.
Wood-Swallows	"	"	1 Aug.-20 Dec.	Whole year	...	Whole year

^a NOTE.—QUEENSLAND.—All insectivorous birds other than those enumerated are protected according to the season.

Districts of Burnett, Darling Downs, East and West Moreton, Wide Bay, and Port Curtis, 1 Sept.-31 Mar.

Petty Sessions Districts of Burke, Carnarvon, Cook, Croydon, Ingham, Mackay, Mackay, Norman, Palmer, Somerset, and Townsville, 1 Nov.-30 April.

SOUTH AUSTRALIA.—All indigenous birds other than those mentioned, and except Crows, White Cockatoo, and Snipe, 1 July-20 Dec.

[†] See page 189.

The Mutton-Bird Rookeries on Phillip Island.

(Observations by the Council of the Aust. O.U.)

DURING the camp-out of the Aust. O.U. on Phillip Island last November, the following observations were made, and are thought worthy of record. Although the camp was pitched at the Narrows rookery, where continuous field observations were made for a week, all the other principal rookeries were visited by one or other of the members of Council.

(1.) Generally, there appears no decrease in the number of Mutton-Birds that annually visit the island. On the contrary, they seem to be on the increase—a statement some of the islanders are prepared to back by affidavit. For instance, there used to be a good interval of barren ground extending between the Cape (Wollomai) rookeries and that of the Narrows. Now the whole distance between these localities may be described as an intermittent rookery. Again, eggs were taken from burrows on the shores of Cat Bay, where the birds were not known to lay before.

(2.) In view of the island becoming a more favoured locality for eggging, and consequently for the increasing number of eggers, it is recommended—in favour of the landowners as well as the birds—that no opening of burrows to obtain eggs be allowed—*i.e.*, if the egg in any particular burrow cannot be withdrawn with an ordinary eggging crook, it be left, and not to open the burrow by removing sand. The displacement of sand or the uprooting of any vegetation about the burrows is liable to cause sand drifts, and drifts grow into dunes, which sometimes envelop everything before them, as is demonstrated on different parts of the coast. Where sand drifts are occurring from this or other cause, the Government—or, in case of private property, the landowners—might be induced to plant Marram grass, which grows well wherever already planted on the island.

(3.) The plan adopted by Mr. C. W. Maclean, Chief Inspector of Fisheries, of registering the names and addresses of eggers last season worked well. The very fact of having to “register” one’s name seemed to keep away the rough element that was reported to have visited the rookeries the previous season. Over 200 names of eggers and visitors were registered at either Cowes or San Remo. Next season a step further might be taken, and eggers be asked to furnish a return of their takings. Such a total return may be found useful for future reference if it were found necessary to regulate the traffic by not allowing persons or parties to take more than a prescribed number of eggs.

(4.) It is also recommended that eggging operations cease on the last day of November in each year. This will give eggers a week or 10 days to collect—ample time.

(5.) It was observed with satisfaction that the local police

(Constable Dunn, of Cowes, and Constable O'Shannassy, of San Remo) in plain clothes assiduously patrolled the various rookeries during eggng time.

(6.) By way of conclusion, it may be mentioned that some consternation was caused among the visitors by the discovery on the west side of Wollomai of a vast number of old bird bones. It has been explained that many years ago Chinese were camped there, and were engaged in collecting Mutton-Birds for oil. Such an eventuality could not occur again without a permit.

On behalf of the Council,

D. LE SOUËF,

Hon. Secretary Aust. O.U.

Melbourne, 21/1/03.

On Certain Birds Changing Colour of Plumage Without Moulting.

(Plate XI.)

BY D. LE SOUËF, C.M.Z.S.

(Read before Aust. O.U., Melbourne Congress, 21st November, 1902.)

THIS is an interesting subject, and one that has lately been combated, especially by our American cousins, so it is probable that a few observations on the subject may be of interest and lead others to study the matter.

Many birds, when changing from their youthful plumage to that of an adult, do so by the feathers by gradations changing; but they generally do so irregularly—that is, the feathers do not all gradually change at exactly the same time, consequently birds so changing often have a mottled appearance. This can be noticed in many birds, such as some of the Birds of Paradise, Pacific Gulls, &c., and is probably far more common than we imagine; but there are often difficulties in the way of proving it, unless the birds are kept in confinement or killed when changing their plumage. In consequence of the feathers changing irregularly, you can generally get feathers in all stages off one bird.

For instance, I was keeping some Silver Pheasants, which were changing from the youthful plumage to that of the adult, in small enclosures, and as one of them died when about a year old, I was enabled to procure feathers in all stages from its wing, back, and breast. They are mounted and here for your inspection this evening.

The feathers in the various stages shown were all taken from one young male, and you will notice that in the wing feathers No. 1 on the left hand of the top row has changed but very slightly, the markings just showing on the lower end; in No. 2



Pheasant Feathers.



1, 2, *Dacelo gigas*.

3, *Halcyon macleayi*.

4, *H. sanctus*.

the markings will be observed extending more towards the end ; in No. 3 the white spaces are enlarging, and as the dark-coloured pigment is getting more concentrated, also in rows, it is becoming darker in colour ; in No. 4 the lines are definite throughout the feather, but irregular ; and in No. 5 they are more definite still, although the feather has not yet quite reached its perfect stage. In the next four, another series, exactly the same thing will be observed, and again it will be noticed how the brown pigment gradually becomes almost black, as in the perfect feather, when it is concentrated into narrow bands. The bottom row of three feathers shows the same stages.

In the second exhibit exactly the same stages will be noticed in the feathers taken both from the back and the breast of the bird, and here again it is apparent that the brown becomes almost black when it is concentrated into narrow bands.*

Again, in many birds the beak also changes colour, especially in sea birds—for example, the beak of the White-capped Albatross (*Thalassogeron cauta*), and also that of the Pacific Gull (*Larus pacificus*), are black when the young are nestlings, but gradually change until by the end of the third year they are of a yellowish-brown colour.

Of course this subject is well known to many ornithologists, but practically not at all to the general public, who consider that birds always moult when changing colour.

The age at which change occurs varies in different birds. Most small birds change in the first year ; others, such as parrots, in the second ; but probably the bulk of the larger birds, such as Pacific Gulls, Ibises, Emus, &c., do not change until the third year. Probably the longest time of all is taken by the Satin Bower-Bird (*Ptilonorhynchus violaceus*), which does not get his rich glossy bluish-black plumage until he is about seven years old. He is then very conspicuous, and consequently more liable to get destroyed by birds of prey than his green-coloured companions, and that probably accounts for there not being as a rule more than one blue male with a flock of these birds, as they always live in companies.

[Mr. Le Souëf has diverged into a field of study which has occupied the minds of many European and American ornithologists, and is to be congratulated for so doing. But the issue dealt with by the writers to whom he makes passing reference is somewhat different to that he has touched upon in his paper. It concerns more immediately seasonal change of colour in plumage than that change which accompanies the maturation of a bird, many instances cited being those of birds which whilst in Arctic regions wear a white or very light-coloured garb, and on coming south to a warmer climate assume a brownish or even darker hue, resuming their lighter garb when they again go towards the Pole. This is a phase of the

* The illustration hardly shows them in exactly the same colour as they are in nature, and therefore the changing from brown to nearly black will not be noticed so clearly.—D. LE S.

problem not so noticeable in Australasia. Here we have no land connection with Polar regions, and consequently the same conditions are not brought prominently under the notice of observers.

Recorded facts and probabilities both seem to favour the theory advanced by Mr. Le Souëf; but is there sufficient evidence to establish it as proved? His examples are from birds in captivity, and the question arises as to whether birds under such circumstances behave exactly as they would in a wild state. Certainly in the case of semi-domesticated birds, such as Pheasants, one would expect them to do so. It is hard to conceive that any very great change of habit could follow, so long as suitable surroundings and food were provided. The specimens of feathers exhibited tend to elucidate one disputed point—viz., whether the barbs and barbules, vanes, &c., of a feather are after a certain stage physiologically living or dead. Some writers on the subject regard only the lower part of the shaft of a feather as alive, and that as only actively alive during the earlier stages of a feather's growth. If, as is to be assumed from his paper, Mr. Le Souëf has conclusive evidence that no feathers were shed by the Pheasants in question, he will have got a step forward towards the solution of this phase of the problem. His specimens apparently lived until the death of the bird. But a difficulty will still remain. The exhibits are not, and could not possibly be, of the same feather in different stages of development or of maturation, and similar ones, though they be in similar or advancing stages of colouration, hardly prove the case. Is it possible that the change of colour is partly produced by the shedding and replacement, or even by the rearrangement of minute barbs and hooklets, and of what may be called "scales"—something more minute still—that is, by alteration of the angle at which they are set on the surface of the feathers? The white "dust" sometimes observed when handling a Cockatoo in some stages of plumage is one proof of the existence of these "scales," and that they are under certain conditions shed. Examination under a microscope reveals that to a certain extent the colouration in Peacocks' and other feathers is an effect of the particular angle at which light rays are refracted from or absorbed by the minute structures with which they are covered. That some pigment does exist must be allowed; but, even what we call by that name is only the particular and varied arrangement of atoms, and in an active cell these might undergo rearrangement, and thus produce a different effect. And if the whole feather be really alive during the full term of its retention by the bird, its cells would probably be active enough to carry pigment or alter its atomical arrangement.

To prove that some birds do change colour without moulting, we have Mr. Le Souëf's facts, supported by, amongst other things, an instance cited in *The Emu* (vol. i., No. 2, p. 71), in which a Galah (Cockatoo), when injured, changed the hue of portion of its plumage:—"Two days after the injury the pink of the injured side had turned a dark red, and the grey of the back was distinctly darker on that side." But against all this—unless it be assumed that birds must be divided into two classes (one which moults when changing colour, and one which does not)—must be set some other facts. For instance, in the *Avicultural Magazine* (p. 18, vol. i., new series), writing of the Blue Wren (*Malurus cyaneus*), Mr. Regd. Phillipps says:—"Early in September the male commenced a full moult, and now, at the beginning of October, scarcely a vestige of his old glory remains. The tiny blue feathers, cast from his head and blown out of the cage by the bird's wings, would lie on the carpet and on the oilcloth in front of the cage, and looked like little specks of blue wash." A young bird is also mentioned as moulting before assuming the adult plumage of the female. Other instances might be given, but this case appears worth citing, because in this Wren there is both a change from immature to mature plumage and a seasonal change. Whether it be moult or change of colour that takes place in birds in a wild state is hard to prove—(stray specimens, even if procured at close intervals, are not fully satisfactory evidence, and the whole matter resolves

itself into a question of evidence)—but in many species of birds a moult does usually (so far as we know) occur as they pass from immature to mature plumage, or from winter to summer dress.

The problem is a difficult one, and to arrive at a satisfactory conclusion the phases of the change from immature to mature plumage will probably have to be considered apart from the questions involved in seasonal changes, and microscopic research into the structure of living feathers will have to play a large part in the inquiry. Will not some of our workers throw further light on the matter? The matter must in some phases remain an open question until further knowledge comes.—H. KENDALL.]

Colour Reversion in Kingfishers' Eggs.

(Plate XI.)

BY ROBERT HALL.

(*Read before the Aust. O.U., Melbourne Congress, 21st November, 1902.*)

MANY species of birds lay coloured eggs in hidden places, so that light will not be even reflected upon them. The *Chthonicola* is one of them. Kingfishers' eggs are invariably white, upon our present knowledge, just as *Pardalotes*' are, both occurring under like circumstances. Yet each family, I find, is subject to reversion. Is one at liberty to use this term, considering the vast period of time since reptiles and primitive birds laid white eggs and then rust-coloured? The recent finding of rust-coloured eggs in three species of Australian Kingfishers and one of *Pardalotus* leads me to think that we are shown cases of reversion—a probable ancestral habit of secreting and depositing pigment. The primitive eggs, like those of their cousins, the reptiles, were probably white, as now, but not so highly glazed. The mediæval eggs were probably partly rust-coloured, as those of the present day *Tuatara* lizard of New Zealand, for example. The Kingfishers, having left the most probable exposed ground nests of the middle ages, with brown eggs, for protection, now lay white eggs, hidden in hollows. It has been thought that many birds, failing to produce brown eggs, after a long period of "typical whites," sought protection for their eggs in the hollows of trees. The finding of eggs of three species of Kingfishers leads me to go one step apart, and suggest that many birds, nesting in the open, with eggs protectively coloured, sought the hollows of trees for other reasons, and lost the mediæval brown, and, by reversion, got back to white. Natural selection, effecting a change in the habit of the birds nesting, did away with the necessity of protective colouration. Now we have Kingfishers' eggs reverting to the mediæval phase. This surely is a slow working, but most likely a universal one.

The *Pardalote* referred to laid a clutch of deep brown eggs in the hollow of a creek near Kyneton, Victoria. These were extracted with a long spoon by Mr. J. Rigby. A few days

later a second clutch was laid, of a fainter brown. These also were extracted. A third clutch was laid, with a much fainter layer of pigment upon them.

The Kingfishers referred to are *Dacelo gigas*, *Halcyon sanctus*, and *H. macleayi*. Of *D. gigas*, the eggs were placed in the open space of a spout, fully exposed to light. Two clutches, each three, were taken, and both showed brownish-grey markings upon them. Locality, Box Hill, Victoria. Of *H. sanctus*, five eggs formed the sitting, and they were placed in the darkness of a tree hollow. Locality, Clayton, Victoria. (Collected per Mr. F. W. Munt.) Of *H. macleayi*, three constituted the sitting. All were spotted upon the sides rather than upon the ends. Locality, Richmond River District, New South Wales.

In *D. gigas* and *H. macleayi* the tendency of a portion of the colour is to appear as if beneath the surface, but there needs to be a further layer or superficial series of blotches to show a contrast in layering. In *H. sanctus* the pigment is all superficial.

The colouration of birds' eggs abounds with theory, and, rather than add to it, I simply add a new fact or two.

Descriptions of a New *Calamanthus* and a New *Megalurus* from Western Australia.

BY ALEX. WM. MILLIGAN, PERTH.

IN the last issue of *The Emu* I described a new *Melithreptus* which I discovered in an expedition to the Stirling Ranges, in the South-East Division of this State. Since then I have gone carefully through all the skins collected, with the result that I have to add a new *Calamanthus* to the list of Australian birds. Also I have to add a new *Megalurus*, from Lake Yanchep, which I obtained during the last Christmas holidays.

CALAMANTHUS MONTANELLUS, n. sp.

General colour above dingy greyish-brown, streaked with black, the feathers being distinctly centred with this colour, but not so broadly as in *C. fuliginosus*, the streaks running in more defined longitudinal lines than in that species; rump and upper tail coverts uniform, tinged with a faint greenish shade; uppermost pair of tail feathers uniform dingy brown, and without subterminal black bar; forehead faintly washed with rufous; lores whitish; eyelid and a narrow eyebrow white; ear coverts brown, resembling feathers of forehead, and showing the faintest tinge of rufous; cheeks, chin, throat, and chest ashy-white, boldly streaked with black down the centre of the feathers; remainder of under surface light yellowish-buff, becoming almost white on abdomen. The sides only of the body streaked with black; axillaries and under wing coverts

cream-coloured, with a faint tinge of pinkish-buff; quills greyish-brown, with edge of inner web cream-coloured; tail feathers (except uppermost pair) brown, with pronounced black subterminal bar and white tips. Bill and feet dark horn colour. Total length, 5.25 inches; culmen, 0.5; tail, 2; tarsus, 0.9.

Type in the Western Australian Museum, Perth.

The new species differs from *fuliginosus* principally in that the upper surface is a lustreless dingy brown, instead of the shiny greenish-brown of that species, and that the striations are narrower. The chin, throat, and chest also show more ashy whiteness, and the striations on those parts are bolder and extend farther down the body. The olive-yellow wash of the lower portions of the body in *C. fuliginosus* is supplanted with a much lighter coloured wash, which inclines to whiteness on the abdomen. There is scarcely any appreciable difference in the external aspect of the sexes.

The new bird was found in the sterile stony tracts on the north or sheltered side of the Stirling Ranges. Its song is a series of musical warbling notes, which it utters either on the ground or in a low bush. It runs along the ground like a mouse, and is very difficult to flush. Apparently it does not leave a body scent, as *C. fuliginosus* is said to do, as my Quail bitch did not show any disposition to follow it, neither did she show any canine signs of pleasure when the dead bird was placed near her nose. The birds were very numerous in the sterile places indicated, but very difficult to secure.

I assign to it the scientific name of *Calamanthus montanellus*, and the vernacular one of the Rock Field-Wren.

MEGALURUS STRIATUS, n. sp.

General colour above dark brown (not fulvous), broadly streaked with black down the centre of the back and mantle; rump and upper tail coverts inclined to dull fulvous, both streaked with black; forehead very faintly tinged with dull rufous; head streaked with black, but not so as to form longitudinal lines; wing coverts, like the back, centred with black and margined with brown; wings dark brown, with secondaries blackish-brown, some of them margined with white; tail feathers dark brown; lores blackish; faint eyebrow whitish; cheeks and ear coverts dull whitish, slightly mottled with dusky edgings to feathers; cheeks, chin, throat, and chest whitish, distinctly and regularly striated with black and brownish-black centres to feathers, the striations more pronounced and broader on chest; centre of abdomen white; sides of body and of abdomen, flanks, and under tail coverts not fulvescent, but washed with smoky-brown and striated with blackish-brown; shoulders of wing edged white; axillaries and under coverts creamy; quills greyish-brown; bill and tarsi fleshy-brown. Total length, 5.25 inches; culmen, 0.45; tail, 2.25; tarsus, 0.75.

Type in Western Australian Museum, Perth.

The bird above described was shot by me at Lake Yanchep, 35 miles north of Perth, during the last Christmas holidays. Whilst writing these notes I have before me skins of the Lake Yanchep bird, and of *M. gramineus*, from Victoria and from Mandurah estuary, which is situate some 40 miles south from Perth. Little difference exists between the Victorian and Mandurah skins. On the other hand, the difference between those skins and the Lake Yanchep skins is most marked. The latter is very much smaller, and in addition lacks the oily fulvous colour of the upper surface, sides, flanks, and tail coverts of the former, and in lieu of it has a dullish lustreless smoky-brown. Another point of difference is that the Lake Yanchep bird is striated from chin to abdomen as boldly as a *Calamanthus*. I shot four birds, and not any one of them exhibited any appreciable difference from the others. The estuary where the Mandurah bird was obtained is salt, and possesses extensive mud-flats covered with samphire. The water of Lake Yanchep is fresh, and heavily charged with carbonate of lime, the formation surrounding the lake being limestone. Is it not possible that the presence of the rich fulvous colour of the estuary bird is due to the mud-flats, and the absence of it in the Yanchep bird to the harsh and harder limestone water?

The notes of the new bird are two melancholy ones, resembling in sound the syllables "tee tee." In the protected area of the Swan River, at Perth, the local bird has three notes, "titty tee tee." The birds were numerous, but difficult to flush, owing to their secretive habits.

I assign to the new species the scientific name of *Megalurus striatus*, and the vernacular name of the Striated Grass-Bird.

Description of a New Acanthiza.

BY A. J. CAMPBELL.

ACANTHIZA MAGNIROSTRIS (Large-billed Tit), n. sp.

Upper surface olive-brown; forehead cinnamon-brown, each feather having a crescent-shaped mark of a brighter colour at the extremity, and tipped with dark brown; upper tail coverts reddish or rufous-brown; tail marked with a band of dark brown near the extremity; cheeks, throat, and chest whitish, each feather centred and edged with dark brown or black; rest of the under surface light olive-brown, darker on the flanks and under tail coverts; bill dark brown; feet brownish or fuscous. Length, 4.25; culmen, .45; wing, 2.0; tail, 1.6; tarsus, .7.

Acanthiza magnirostris has more of the black and white mottled under surface than *A. diemenensis*, and thus more re-

sembles *A. pusilla* in this respect, but may be easily separated from both these birds by the great size of its bill.

Four specimens (two being young) of the new species were collected by Mr. A. G. Campbell on King Island last November. For further remarks see his article, "The Birds of King Island," in this issue, page 207.

He has also brought under my notice another Tit, of which unfortunately he was only able to procure a single specimen—an adult, however. It differs from the three species of Tits before-mentioned by its more slender tarsi and wings, but conspicuously by the absence of the light crescent-shaped marks on the brownish (rufous-brown) feathers of the forehead, and by the white feathers of the cheeks, chest, &c., having the centre only black, and not also edged with that colour as in the other species. Length, 4.0; culmen, .3; wing, 2.1; tail, 1.6; tarsus, .85. By this diagnosis I strongly suspect the stranger to be a re-discovery of Gould's long-lost *Acanthiza ewingii* ("Birds of Australia," vol. iii, pl. 55). If not, and pending the receipt of more material, I venture to provisionally name the bird *A. rufifrons*, or the King Island Tit.

The Birds of King Island.

BY A. G. CAMPBELL.

KING Island, lying at the western end of Bass Strait, which separates Tasmania from the mainland of Australia, has always been of great interest to the biologist. A study of its life-forms has materially assisted in proving that the island State at no very remote period was of much greater area than it is at present, and, further, was actually connected with the mainland before the mighty forces of the ocean succeeded in opening up a strait along some weak spot. King Island is in area about 272,000 acres, 40 miles long by 16 miles at its widest part. Though only 50 miles separate the north point from Cape Otway on the mainland, and a similar distance the south point from the north-west of Tasmania, yet to the south are found several islands and rocks, and the straits between are very shallow, pointing to the fact that King Island was attached to Tasmania at a later period than to the mainland. In fact, the strait on the north undoubtedly marks the spot where the sea first broke in and commenced its work of severing Tasmania from Australia, for on the eastern side of Bass Strait, between Wilson Promontory and the north-east point of Tasmania, the continuous chain of islets, all built of a similar granitoid rock, proves that there a land bridge existed at a more recent date, when some of the higher animals were in existence.

The presence of the Emu and kangaroo in Tasmania can

only be accounted for by this fact. The existence, however, of these on King Island has yet to be proved, though remains of an extinct wombat of the Tasmanian species have been discovered in the sand dunes. But when an examination is made of the existing avifauna, it is impossible to dispute its distinctly Tasmanian character. Of some 80 species recorded from King Island 14 are purely Tasmanian, 64 are common to both Tasmania and the mainland (one, a Wren, however, has recently been made a new species), while only two are peculiar to the mainland: one, a small land form (*Cisticola*), is migratory, and has apparently just overstepped its southern limit; another does not count for much, being a sea bird with roving habit.

In November, 1887, an examination was made of King Island by an expedition organised by the Field Naturalists' Club of Victoria. An account of the birds identified, together with other reports, appeared in the official journal of the Club, the *Victorian Naturalist*, vol. iv., No. 9.

The list published therein is a record of 69 species, most of which are land forms either peculiar to Tasmania or found both in Tasmania and on the mainland. Though 11 more species are now added to the list, there are doubtless some still unrecorded. A residence of several seasons on the island would be the only effectual means of noting all the birds, particularly those that are merely visitants.

It may not be an inopportune time to publish a few extra notes which were collected during a visit in November last; for the face of King Island has so altered during the last fifteen years that it may not be long before some forms are driven away or killed out, as a result of the opening up of the land for dairy farming and cattle rearing. Year by year the native timber (eucalyptus) is becoming less; even now it is a difficult matter to get sufficient for fencing purposes, and the only large tracts on the island, along the east coast, have been decimated by bush fires. The characteristic vegetation is a short, thick scrub, consisting of tea-tree, both *Leptospermum* and *Melaleuca*, *Banksia*, or native honeysuckle, and the broad-leaved "boobyalla" (*Myoporum*). This scrub occupies sheltered hillsides and pockets between the sand hills, but on the flat areas, which are boggy at some seasons, mostly fresh-water tea-tree (*Melaleuca*) is found. The gum trees (principally *E. globulus*) are found along the valleys of some of the rivulets, and in one or two patches away from running water. Growing in the kindly shade of the eucalypts are frequently found blackwood acacia, hazel, and "boobyalla" trees, with an occasional tree fern, while the ground is clothed with several varieties of ground ferns.

At Pass River there is an excellent patch of native timber, with the birds undisturbed; but that is practically the only spot on the west coast of which this can be said. From a bird's point of view, it is now like an oasis in a desert of pasture.

King Island is noticeably poor in sea birds, but that is probably because the smaller and less disturbed islands offer safer retreats. Of the land birds, the majority, if not all, are found breeding on the island.

In the following list a complete record is given of all species that have been noted for King Island. Where the name only appears, it signifies that the species was observed by the Field Naturalists' expedition, but not by myself on my recent trip, while those marked with an asterisk are the species not previously recorded.

CIRCUS GOULDI (Harrier).—This species will doubtless increase in numbers as the island is more opened up; for in the magnificent pastures, as well as in the lagoons and swamps, it will find abundant feeding and nesting grounds.

ASTUR NOVÆ-HOLLANDIÆ (White Goshawk).

*ASTUR APROXIMANS (Goshawk).—Occasionally seen.

UROAËTUS AUDAX (Wedge-tailed Eagle).

HALIAËTUS LEUCOGASTER (White-bellied Sea-eagle).—Two or three pairs only are known about the island, and they are jealously guarded by the residents.

HIERACIDEA BERIGORA (Brown Hawk).—A trait exhibited by this species on King Island shows that there is no fear of man induced when in undisturbed retreats. A brooding bird did not leave her nest although four *Melithrepti* were shot from the leafy tops of the tree in which it was placed. During the journey across Bass Strait one of these Hawks was noticed following the steamer. It appeared to have been on the wing for some time, and was flying heavily. On endeavouring to perch on the taffrail of the boat, a strong gust of wind swept it into the water, where the poor thing was left to its fate.

*CERCHNEIS CENCHROIDES (Kestrel).—Occasionally seen.

NINOX MACULATA (Spotted Owl).—This was plentiful in the timbered valley of the Pass River. Its call is pitched a little higher than that of the mainland (Boobook) species.

CORONE AUSTRALIS (Raven).—Parties of these birds frequently cross the Strait to and from Tasmania.

STREPERA FULIGINOSA (Black Crow-Shrike).—Most plentiful. Assembles in rowdy mobs along the beach to search among the kelp for sand-hoppers and other dainty morsels. Nesting usually commences about the second week in November, the birds building their conspicuous nests in any convenient scrub. Birds in immature plumage are common, it being probably three years before the rusty-brown edgings to the feathers of the back, wings, and particularly the under surface, give place to the stainless black and deep grey of maturity.

COLLYRIOCINCLA RECTIROSTRIS (Whistling Shrike-Thrush).—A shy species inhabiting the belts of fresh-water tea-tree (*Melaleuca*). Its strong notes are often heard in answer to a rival in a neighbouring patch.

GRAUCALUS PARVIROSTRIS (Small-billed Cuckoo-Shrike).—Found chiefly in the timber, but in flocks of a dozen or more may be seen feeding out in heathy country.

PETRŒCA PHŒNICEA (Flame-breasted Robin).—A common summer

visitant, nesting in the dead trees and stumps in clearings adjacent to timber.

PETRECA RHODINOASTRA (Pink-breasted Robin).—Found in one or two sheltered nooks along the Pass River where hazel, boobyalla, and blackwood flourish under the kindly shade of a few tall eucalypts. Attention is often first attracted to the bird by its sharp note, resembling very much the click of the grasshopper. A nest containing three eggs taken in November proves it to be a late breeder.

PETRECA VITTATA (Dusky Robin).—A species common everywhere, nesting sometimes on the dead trees in the clearings and sometimes in living scrub. The young, when they leave the nest, are streaky in appearance, and somewhat conspicuous objects when sitting on a dead twig waiting to be fed; each feather of the head and back has a light-coloured stripe down the centre, and the light-coloured feathers of the under surface are edged with brown. The old birds are very homely in appearance and in their ways, though at times they may become pugnacious. Their efforts at song are more indicative of their vivacity than their musical taste.

RHIPIDURA DIEMENENSIS (Dusky Fantail).—This inhabits the *Melaleuca* scrub, and, excepting that its song differs, it appears to be very close to the mainland species, *R. albiscapa*.

MALURUS ELIZABETHÆ (Dark Blue Wren), (Plate X).—This was taken by the Field Naturalists' expedition in 1887 to be *M. gouldi* of Tasmania, but an examination of a series of skins at a later date proved it to be distinct—a much larger and darker bird. A number of skins procured during the recent trip fully justifies its separation as a new species. One specimen, however, appeared to be a connecting link, as regards colour, with *M. gouldi*; but as against this it is the largest in size of any yet taken, with a bill .55 inches in length. The measurements of the male of *M. elizabethæ*, taken in the flesh, are:—Length, 5.5 inches; bill, .5 in.; wing, 2.1 in.; tail, 2.5 in.; tarsus, 1.0 in. The dark intensified colour is seen not only in the blue but in the black of the upper surface; throat very deep Prussian blue, separated from the whitish abdomen by a band of black, below which again is a washing of light blue, half an inch wide on the flanks, but narrowing towards the centre of the chest; the lesser wing coverts are Prussian blue, and primaries are edged with light blue. The female has a brownish-blue tail, but the young in the first year have the tail of similar colour (brown) to the mantle. This Wren is one of the commonest birds on the island, being found not only in every patch of scrub and timber, but also inhabiting the tall grass and trefoil in the pasture. The theory that the Blue Wren of the mainland is polygamous is rendered uncertain when it is remembered that the females and immature males by far outnumber the full-plumaged males, and it has been suggested that several brown ones follow each brilliant lord about for company. On King Island the sexes are more evenly balanced. As proof that the Wrens are sociable, one incident will suffice, for when a party of three little short-tailed brown young ones, recently from the nest, was disturbed, no less than three brilliant males appeared, and, flitting up and down a log, within a foot or two of the intruder, showed as much concern as the mother bird herself.

GEOCICHLA MACRORHYNCHA (Large-billed Ground-Thrush).—A pair of birds was noted in a patch of tea-tree, among gum saplings. The very delicate song of the male late in the afternoon is a counterpart of that of the mainland species, *G. lunulata*.

*MEGALURUS GRAMINEUS (Grass-Bird).—This is easily identified by its shrill whistle among the reed-beds bordering the lagoons.

CISTICOLA EXILIS (Grass-Warbler).—Common.

ACANTHIZÆ (Tits).—One bird shot on the Pass River coincides in every particular with the description of *A. ewingii* of Gould, which was afterwards merged by that naturalist, presumably for want of further material, with *A. diemenensis*. At the same time attention was drawn to its being the slenderer bird, with more brown at the base of the primaries. A second *Acanthiza*, which inhabits more the shorter scrub of King Island, away from the watercourses, proves to be a species quite distinct from any known; a description of it is given in another part of this issue (page 202), under the name of *A. magnirostris*, or Great-billed Tit.

SERICORNIS.—The species of Scrub-Wren common on King Island approaches nearest *S. humilis* of Tasmania, in having dusky under parts, but from its smaller size, lighter colour on the back, and the possession of a distinct band on the tail, it appears to be a link between that form and *S. osculans* of the southern part of Victoria. Further research may prove these two species to be very closely allied.

*EPHTHIANURA ALBIFRONS (White-fronted Chat).—A sombre-coloured bird shot on the margin of some scrub proved to be a young female of this species, but no mature birds, nor indeed any other specimens, were seen.

PACHYCEPHALA OLIVACEA (Olive Thickhead).—This large Thickhead with beautiful æsthetic markings, is characteristic of the dense scrubs of King Island, but its distinctive whistle is more often heard than the bird is seen.

ACANTHORHYNCHUS TENUIROSTRIS (Spine-bill).—This seems even more at home in the gardens about the homesteads than in the native bush, where the flowers are small and not so laden with honey and insects.

ZOSTEROPS CÆRULESCENS (White-eye).—Common.

MELITHREPTUS VALIDIROSTRIS (Strong-billed Honey-eater).—This powerfully built bird is ever on the move, in parties of five or six, among the gum trees along the ridges and in the valley of the Pass River, where alone on the island it is found. Not only does it search among the leafy tree tops for its food, but it can be seen climbing about the loose shreds of bark, and prying into every crevice. It has a harsh cry.

MELITHREPTUS MELANOCEPHALUS (Black-headed Honey-eater).—This is another bird seen only in the timber about Pass River, and is there even more plentiful than the preceding species. It is a very energetic little Honey-eater, and rather pugnacious, driving away even the larger Yellow-throated Honey-eater from its domains. On one occasion two Black-headed Honey-eaters fell at my feet struggling in one another's claws, and they continued the dispute on the ground for some seconds. They, too, pry about actively on the eucalyptus bark in search of food. The fully-fledged young are brown on the back, quite yellow on the under surface, and the complete brilliant black hood characteristic of the adult is represented only by dull black on the face and chin.

- PTILOTTIS FLAVIGULARIS (Yellow-throated Honey-eater).—Inhabits the dense scrubs. Its note and all its habits are similar to *P. leucotis* of the mainland.

MELIORNIS AUSTRALASIANA (Crescent Honey-eater).—Is a rowdy denizen of tea-tree scrubs along the watercourses.

MELIORNIS NOVÆ-HOLLANDIÆ (White-bearded Honey-eater).—Few in number, but more easily found among cultivated flowers than among the native.

ACANTHOCHERA INAURIS (Yellow Wattle-Bird).—One pair noted feeding on a flowering blue gum tree.

PARDALOTUS AFFINIS (Yellow-tipped Pardalote).—Common only where gum trees exist.

PARDALOTUS QUADRAGINTUS (Forty-spotted Pardalote).

HIRUNDO NEOXENA (Swallow).—Common.

PETROCHELIDON NIGRICANS (Tree Martin).—Found among the gum trees.

ANTHUS AUSTRALIS (Ground-Lark).—Common in the pastures.

ARTAMUS SORDIDUS (Wood-Swallow).—A few pairs are found in the timber.

HALCYON SANCTUS (Sacred Kingfisher).

CUCULUS PALLIDUS (Pallid Cuckoo).—Occasionally heard.

CACOMANTIS FLABELLIFORMIS (Fan-tailed Cuckoo).—Occasionally heard.

*CHALCOCOCCYX BASALIS (Narrow-billed Cuckoo).—One specimen shot.

CHALCOCOCCYX PLAGOSUS (Bronze Cuckoo).

It is noticed that the female Cuckoos are silent and very shy, while the males of the smaller species whistle, during the nesting season, at all times of the day, sometimes rivalling one another from adjacent tree tops.

CALYPTORHYNCHUS FUNEREUS, var. XANTHONOTUS (Black Cockatoo).

CALLOCEPHALON GALEATUM (Gang-Gang Cockatoo).

CACATUA GALERITA (White Cockatoo).

PLATYCERCUS FLAVIVENTRIS (Green Parrakeet).—This species is one of the few of this genus having the immature plumage differing from the adult. The adult Green Parrakeet of King Island is very large, measuring $15\frac{1}{2}$ inches in length. The back is black, with indigo-green edgings to the feathers; the under surface greenish-yellow, with under tail coverts washed with crimson. The young birds, probably until three years of age, are a uniform smudgy olive-green, excepting the blue on primaries and cheeks and the crimson on forehead, which, however, are not so bright as in the adult. November is the nesting season.

NEOPHEMA VENUSTA (Blue-winged Grass-Parrakeet).

PHAPS ELEGANS (Brush Bronze-wing).—A few are found in scrubby areas.

TURNIX VARIA (Painted Quail).—May be flushed in short scrub.

HYPOTÆNIDIA BRACHYPUS (Slate-breasted Rail).

*PORPHYRIO MELANONOTUS (Bald-Coot).—Seen running about on weedy marshes.

*FULICA AUSTRALIS (Coot).—In flocks on the larger lagoons.

HÆMATOPUS LONGIROSTRIS (Pied Oyster-catcher).—This species is found on the sandy beaches nesting among loose seaweed. Large young ones were seen early in November.

HÆMATOPUS UNICOLOR (Black Oyster-catcher).—This larger species is not so common, and lives mostly among the rocky parts of the coast. At one place, an old resident affirms, a pair of these birds has lived and reared young each season for 25 years at least.

LOBIVANELLUS LOBATUS (Spur-winged Plover).—Occasionally seen.

ÆGIALITIS RUFICAPILLA (Red-capped Dottrel).

ÆGIALITIS CUCULLATA (Hooded Dottrel).—Plentiful on the sandy beaches and also found around some of the lagoons. Newly-hatched young were seen during the second week in November. With striped downy coats, when planting alongside some bit of seaweed they are easily passed by.

NUMENIUS CYANOPUS (Curlew).

Doubtless several other wading birds could be recorded during an extended residence on King Island.

HYDROPROGNE CASPIA (Caspian Tern).—In 1887 the Field Naturalists' expedition, while on the east coast, shot a Caspian Tern, and also took its eggs. To this day the other bird lives alone at the same spot where it was bereaved of mate and progeny at one fell stroke. Probably they were the only birds of this species about the island.

STERNA BERGII (Crested Tern).

LARUS NOVÆ-HOLLANDIÆ (Silver Gull).—A colony of these birds' nests yearly on a rock standing in Currie Harbour, on the west coast. They begin laying in November. Some years, when robbed by the local residents of their fresh eggs, they depart *en masse* to a reserve rookery further north.

GABIANUS PACIFICUS (Pacific Gull).—This terror of all smaller sea birds, and shore birds too, is seen in all its stages from the mottled brown and grey of the immature plumage to the brilliant white of the adult, relieved by black wings and back, this being assumed when three years old. An unusual spectacle of a bird flying backwards was seen one day when a Pacific Gull on rounding a point met with a strong breeze, and with its wings still moving was driven backward.

CYMODROMA GRALLARIA (White-bellied Storm Petrel).

PUFFINUS ASSIMILIS (Allied Petrel).

PUFFINUS TENUIROSTRIS (Short-tailed Petrel).—When on shipboard about the latitude of Wilson Promontory, at 6 a.m. one morning in November, thousands of Mutton-Birds were seen flying out to westward for the day.

PRION DESOLATUS (Dove-Petrel).

PHALACROCORAX CARBO (Black Cormorant).

PHALACROCORAX GOULDI (White-breasted Cormorant).

SULA SERRATOR (Gannet).—A graceful diver.

*PODICEPS CRISTATUS (Tippet Grebe).—Occasionally seen on lagoons.

*PODICEPS NESTOR (Hoary-headed Grebe).—Seen on lagoons.

CATARRHACTES CHRYSOCOME (Crested Penguin).

EUDYPTULA MINOR (Little Penguin).

CHENOPIS ATRATA (Black Swan).—Common.

ANAS SUPERCILIOSA (Black Duck).—Common.

NETTION CASTANEUM (Teal).—This and the preceding species find much of their food in the kelp on the seashore, and in the shallow water among rocks. They also frequent inland lagoons in company with the other swimmers enumerated, all of which nest on the island.

*SPATULA RHYNCOTIS (Shoveller).

BIZIURA LOBATA (Musk Duck).—Common. When swimming fast to get away from an intruder, like a ship at high speed, this bird sinks deeply into the water, only the head and neck being visible.

It may be as well to conclude with the interesting fact that Albatrosses—apparently *Thalassogeron cautus*—are found on Reid Rocks, about 10 miles south-east of King Island. Passing in the steamer on the north side, 20 or 30 birds were distinctly visible sitting upon nests. Should not the Tasmanian Government extend the protection it gives to Albatross Rock, a few miles away, to Reid Rocks also?

North Queensland Notes on Some Migratory Birds.

BY FRED. L. BERNEY.

THE Richmond District of the Flinders River, on its southern side, where most of my notes were made, is high, open, practically treeless downs, watered by many bore streams; while Homestead, on the Campaspe River, is ordinary forest country—ironbark and bloodwood ridges, with box flats. Where the district is not specially named the note refers to Richmond.

WELCOME SWALLOW (*Hirundo neoxena*) and FAIRY MARTIN (*Lagenoplastes ariel*).—My notes are hardly full enough to warrant my saying more than that I think these two are winter visitors to us, arriving middle to end of April, and leaving again in September. I found a colony of the spouted nests of the latter, most of which contained fresh eggs, as early as 19th August.

BLACK AND WHITE SWALLOW (*Cheramæca leucosternum*).—I first came across this Swallow on 24th May, 1900, on the Flinders River, 40 miles below Hughenden; the following winter, although I was in the district, I saw nothing of it, but this winter I have seen it fairly frequently, on and after the 15th April, on the Flinders, about 30 miles below Richmond, never more than three or four together.

THE ROLLER or DOLLAR-BIRD (*Eurystomus australis*).—During the summer of 1900–1901 these birds were plentiful about Homestead, on the Campaspe, where they commenced arriving on 20th October. By the 3rd November their queer chattering could be heard everywhere. Towards the end of the following March they got scarce, and I have a note that I heard one on the 20th April, but did not remember to have done so previously for two or three weeks. Out west they are scarce, and I have only met with it three times in four years, twice about Richmond and once at the head of the Landsborough, in January and March respectively, the latest date being the 22nd of the latter month.

BEE-EATER (*Merops ornatus*).—From my diary I take the following dates of arrival and departure:—1898, 2nd October, one seen, the first; 3rd October, numerous. 1899, 9th September, first birds seen. 1900, 1st September, first birds seen; 5th September, numerous. 1901, 25th August, fairly plentiful. 1902, 25th March, all disappeared suddenly.

The winter of 1898 was exceptionally severe, which may possibly account

for their late arrival. These notes refer to the Hughenden and Richmond districts.

WHITE-SHOULDERED CATERPILLAR-EATER (*Lalage tricolor*).—Showed up during the month of September in 1898 and on the 23rd August the following year. I found a nest with two eggs on the 11th November in 1898. Notes refer to Cameron Downs, 40 miles south of Hughenden.

GOULDIAN FINCH (*Poephila gouldiæ*).—Concerning this very handsome Finch, I cannot do better than repeat the information given me by a bird-catcher who is a keen ornithologist. He reported it as being a summer visitant to the Homestead district, where the earliest arrivals might be looked for at the end of November, or more probably during December, the main body arriving during January, by the end of which month they would be fairly plentiful. They nested there, building their nests in the spouts of hollow trees, and left again at the end of April, when they are supposed to journey north-west. All the old birds and most of the young ones go, but some of the latter remain right through the winter. The immature, which are very plain coloured, do not obtain their full adult plumage till Christmas. They extend as far west along the northern railway line as Torrens Creek. They are always known as "Painters" to Homestead people.

CHANNEL-BILL (*Scythrops novæ-hollandiæ*).—A summer visitor. My earliest records of having heard its rasping screech are 27th October, 1898, near Hughenden, and 18th October, 1900, at Homestead. My latest date is 4th March, 1901.

KOEL (*Eudynamis cyanocephala*).—I have only come across the Koel about Homestead, where it was fairly common during the summer of 1900 and 1901. I first heard its loud, clear, indescribable call on 22nd December, and my latest date is 14th March. The birds confined themselves to the timber along the river and creeks, never in my experience being seen out on the ironbark ridges. During January they were living on the hard, green, unripe fruit of a wild fig that grew on the river's bank.

COUCAL (*Centropus phasianus*).—"Coop coop coop coop coop coop coop," with a pause after the first "coop" and the balance rattled off. Who, hearing in the early morning this curious call for the first time, has not wondered from what bird it could possibly come? I did, and put it down to some sort of Heron, for the sound came from the creek. But a few days later I found I had made a mistake, and so did the Coucal, which enabled me to make the following observations:—Feathers of the neck lanceolate, stiff, harsh, and spiny; tail that is much too long for its body, and over which it appears to exercise very little control; an exaggerated lark-like spur on one of its hind toes, a pair of very keen hawk-like eyes, a deep-keeled breast bone and thick, meaty thighs, and a strong, capacious stomach, which was crammed with grasshoppers; it was an immature specimen I had secured, immature to the extent that it had not yet attained to the black plumage state. What a strange bird this is. I have only one year's experience of *C. phasianus*; this was at Homestead, where I believe it to be a migratory bird, arriving there in the middle of September, and after spending the summer leaving the district at the end of March or early in April. The only thing against this idea is that I shot one, the one just mentioned, on the 30th June, but of course it is possible odd birds remain through the winter; but I saw or heard no others. Only to be found along the timbered creeks where the undergrowth is tall and rank. Their cry in the early morning, their favourite time, may be heard at a distance of two or three miles.

AUSTRALIAN DOTTREL (*Peltohyas australis*).—An occasional summer visitor in small numbers; five are the most I have seen together. 16th December is my earliest record and 19th January the latest. Sometimes they are on the flooded bore streams and at others on the high, dry, wind-swept downs.

ORIENTAL DOTTREL (*Ochthodromus veredus*).—A regular summer resident in large numbers, beginning to arrive during October and November, the earliest that I have seen them being 10th of the former month, but the big body of them does not show up till December, and they leave again at the end of March. Seen generally in the vicinity of water such as bore streams on the high open downs. In the course of their flight, which is very rapid, sharp zig-zag turns are made simultaneously by the whole flock with a smartness and precision that are wonderful. Should you pass close to them when on the ground they stand like little statues, their heads all turned one way; they are then very hard to see, and it's the first intimation you get of their presence when they go with a rush, perhaps a hundred of them. There is no getting a shot if you are not ready, and you watch them regretfully as they race away, blaming yourself for missing a chance like that by not having a couple of cartridges in your gun. Suddenly ten more get up from the same spot, right under your elbow. You load then, and, carefully quartering the ground, flush three more, when, using both barrels, you stop one of them. It is never too late to load with these birds, for you can never feel quite sure that they are all gone. They have a strange habit—always a few of them—of standing close, very close, after the main mob have flown. When on the wing in mobs they utter a whistle that sounds as though it was produced through a muffled pea-whistle.

HOODED DOTTREL (*Egialitis cucullata*).—During the summer of 1899 and 1900 I saw this species pretty frequently on the bore streams near Richmond, and shot a female for identification.

BLACK-FRONTED DOTTREL (*Egialitis melanops*).—To be seen commonly here on all waters during the summer, singly or in pairs. Should more than two come together it generally leads to unpleasantness. They are pretty little birds to watch with the assistance of field glasses as they trip along the water's edge. To what extent they migrate with the advent of winter depends very much on the severity or mildness of the season; some years they leave us entirely, while this winter so far (end of July) shows no diminution of their numbers. They nest with us, though the sheep running round the water-holes must sadly interfere with this operation. I watched a pair, with aid of my glasses, with two well-feathered youngsters on 29th November last year.

RED-CAPPED DOTTREL (*Egialitis ruficapilla*).—Only once (January, 1900) have I come across this little Dottrel, with its conspicuous white forehead; there was a pair of them, but they only remained a few days.

RED-KNEED DOTTREL (*Erythrogonyx cinctus*).—This smart-looking Dottrel is fairly common from December to May in this district, always at the water's edge and generally in couples. I have seen as many as five at a dam, but you could not say they were together.

AUSTRALIAN PRATINCOLE (*Siltia isabella*).—Pratincoles during the summer are very numerous on the open downs about Hughenden and Richmond, where they nest. I have found youngsters in every stage of down and feather from 10th November to 12th March. Their eggs, laid on the bare ground, are among the hardest to see that I know of; I have stood a few paces away from a nest containing two eggs, and having,

without moving, taken my eyes off it for a moment, have found it very hard to locate again. Often when driving sheep have I watched the desperate efforts of a mother bird to beat off some particular spot the advancing host of "woollies," throwing herself with outspread wings in the faces of the wondering sheep. Poor little *isabella*! it would indeed be a hard heart that would not go to your assistance; and as I ride away I am amply repaid by the way she runs, breathless but contented, little short runs each ending in a tip up and down, round two or three pieces of broken stone against which squat her two little mottled chicks. Though generally feeding on the ground, I have noticed them at times wheeling in the air, now just clear of the vegetation, and again as high as a house, in company with their Oriental cousin and White-rumped Swifts (*Cypselus pacificus*), catching something, but I could not see what. They often fly and call during moonlight nights. They leave us at the end of April, but it is no uncommon thing for a few individuals to remain right through the winter.

ORIENTAL PRATINCOLE (*Glareola orientalis*).—Never saw this species anywhere but at Clare Valley, Richmond. Here in 1899 they arrived on 30th December and remained till early in March, being all gone by the middle of the month; between these dates they were fairly common, always in company with *Stiltia isabella*. During the following summer I was away, but in 1901 they showed up again in their old haunts on the 16th December; this time they only remained a few days. This Pratincole is a handsome bird, much more so than *isabella*, the dark olive of the back contrasting with the white tail coverts and tail, the rich deep rust-red of the under surface of the wings showing up conspicuously when flying.

SHARP-TAILED STINT (*Heteropygia acuminata*).—Reaches Richmond middle of November, and leaves again early in April. Generally to be found in small parties of four or five, but as many sometimes as thirty, wading, not like the *Ægialitis*, where the bare expanse of mud meets the water, but rather in back waters where the swollen stream has flooded the grass land, or where the tops of the water-grass and aquatic herbage just push their heads above the surface. Here the Tringa or Stint loves to stand knee-deep, while the *Ægialitis* seldom wet more than their feet.

LITTLE STINT (*Limonites ruficollis*).—Shot one at Clare Valley, Richmond, in February, 1900, which was kindly identified for me by Mr. de Vis. Only time seen.

GREENSHANK (*Glottis nebularius*).—My only experience of this bird is during the past summer, at Clare Valley, where I first noticed it in the middle of November. Thence to 29th March following it could be fairly frequently seen, in little mobs of three or four, always about water.

LITTLE WHIMBREL (*Mesoscolopax minutus*).—A solitary individual at a dam 20 miles to the south of Hughenden, on the 30th October, 1899, was my introduction to this species, but subsequently I have seen them in large numbers. In 1899, although arriving at Clare Valley early in November, they were not numerous till past midsummer. By the end of January flocks of 20 or 30 might be seen, and these increased by 6th March to flocks of seven or eight hundred. By 6th April they had all gone again. During the past summer they did not show up at all till 3rd April, when they suddenly appeared in thousands at one of the Maxwellton (near Richmond) dams. They were everywhere, in the air and on the ground, and as I rode among them, kept rising to get out of my way like a plague of grasshoppers. They remained but a couple of days, and then left entirely. Their cry, which is very noticeable, sounds like "Whai-ut whai-ut," uttered loudly and boldly.

Arrivals and Departures of Birds, Scott's Creek, Cobden, Victoria.

BY G. GRAHAM.

ARRIVALS.

	1896-7.	1897-8.	1898-9.	1899-0.	1900-1.	1901-2.
Yellow-faced Honey-eater (<i>Phylotis chrysops</i>)	... Aug. 22	Sept. 3	Aug. 13	—	Aug. 7	—
Spine-tailed Swift (<i>Chetura caudacuta</i>)	...	Jan. 28	Feb. 21	Feb. 5	Jan. 25	Feb. 6
Flame-breasted Robin (<i>Petraca phenicea</i>)	...	April 8	April 4	April 9	March 29	April 3
Red-tipped Pardalote (<i>Pardalotus ornatus</i>)	... Sept. 13	Sept. 13	Aug. 14	Aug. 5	Sept. 15	Aug. 5
Wood-Swallow (<i>Artamus sordidus</i>)	... " 15	" 5	" 14	" 30	Aug. 28	" 25
Little Cuckoo-Shrike (<i>Graucalus mentalis</i>)	... " 10	" 8	" 23	" 30	" 26	" 26
Bronze Cuckoo (<i>Chalcococcyx plagosus</i>)	... " 29	" 21	Sept. 4	Sept. 1	Sept. 14	" 30
Fan-tailed Cuckoo (<i>Cacomantis flabelliformis</i>)	... Aug. 25	" 12	Aug. 14	Aug. 5	Aug. 7	" 31
Kestrel Hawk (<i>Cerchneis cuculoides</i>)	... Sept. 1	" 5	" 28	" 28	" 12	Sept. 4
Blue-winged Grass-Parrakeet (<i>Neophema vernalis</i>)	... " 10	" 14	Sept. 12	Sept. 12	Sept. 14	" 7
Pallid Cuckoo (<i>Cuculus pallidus</i>)	... Sept. 29	" 26	" 5	" 4	" 8	" 22
Sacred Kingfisher (<i>Halcyon sanctus</i>)	... Nov. 1	Oct. 26	Oct. 9	Oct. 15	Oct. 19	Nov. 6
White-browed Wood-Swallow (<i>Artamus superciliosus</i>)	... Dec. 20	Dec. 11	" 9	—	Nov. 14	" 14
Masked Wood-Swallow (<i>A. personatus</i>)	... " 20	" 11	" 9	No nesting Oct. 22	" 14	" 19
Hooded Robin (<i>Petraca bicolor</i>)	... Nov. 3	Nov. 7	Nov. 2	Nov. 1	" 9	" 19
Narrow-billed Bronze Cuckoo (<i>Chalcococcyx basalidis</i>)	... Sept. 29	—	—	—	—	—
Pink-breasted Robin (<i>Petraca rhodogaster</i>)	...	—	April 9	—	April 6	—

[Emu
1st April

DEPARTURES.

Yellow-faced Honey-eater	...	...	...	March 30	April 21	—	—	—	—	—
Pink-breasted Robin	...	...	...	—	—	—	—	—	—	—
Spine-tailed Swift	...	...	...	—	—	—	—	—	—	—
Flame-breasted Robin	...	...	...	—	Sept. 15	Sept. 14	Sept. 1	Sept. 5	Oct. 25	—
Red-tipped Pardalote	...	...	...	Jan. 30	—	Jan. 26	—	—	—	—
Wood-Swallow...	...	...	...	April 8	April 30	May 1	—	—	—	—
Little Cuckoo-Shrike	...	...	...	March 30	" 15	April 15	—	—	—	—
Bronze Cuckoo	...	...	...	Jan. 24	—	Jan. 15	Jan. 1	Jan. 5	—	—
Fan-tailed Cuckoo	...	...	...	" 24	—	" 20	" 1	—	—	—
Kestrel Hawk	...	...	...	March 28	April 10	April 10	—	—	—	—
Blue-winged Grass-Parrakeet	...	...	...	" 30	" 10	" 10	—	—	—	—
Pallid Cuckoo	...	...	...	Feb. 4	—	Jan. 6	Jan. 1	Jan. 12	—	—
Sacred Kingfisher	...	...	...	March 20	April 5	—	—	—	—	—
White-browed Wood-Swallow	...	...	...	—	" 30	March 13	—	April 8	—	—
Masked Wood-Swallow	...	...	...	—	" 30	" 13	—	" 8	—	—
Hooded Robin	...	...	...	—	—	—	—	—	—	—

Occasionally a few pairs of Flame-breasted Robins breed in the forest, but do not stay here with the brood through the summer. Other migrants are :—*Circus gouldi* (Harrier), arriving generally in October and leaving in early autumn ; also Grass-Warbler (*Cisticola exilis*), arrives in December and leaves in February ; the Snipe (*Gallinago australis*) arrives in September and leaves in March ; the Straw-necked Ibis (*Geronticus spinicollis*) is a regular visitor from February to June and August ; and the Stubble Quail (*Coturnix pectoralis*) from either October or November to April. *Petrarca bicolor* (Hooded Robin) is a regular visitor each November, but irregular in numbers—some seasons very few, others very plentiful.

Stray Feathers.

IN addition to the Blue Wren and Red-browed Finch, mentioned elsewhere, the Barnard Parrakeet (*Barnardius barnardi*) and the Black-ringed Finch (*Sticteptera annulosa*), owned respectively by Mesdames Johnstone and Williams, England, have bred, it is believed for the first time, in the United Kingdom.

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A "LOVELESS" PARRAKEET.—My Alexandra Parrakeet has laid four lovely eggs, on the 18th, 20th, 22nd, and 24th December respectively. I have had this bird in my possession for about seven years, and this is the first occasion she has produced eggs.—C. FRENCH, JUN. Richmond, Vict., 25/12/02.

* * *

COOMOBOOLAROO (Q.) NOTE.—I have no bird news to tell you except that our little "Shepherd" (*Rhipidura tricolor*) is still bent on fighting his shadow in the window. (See *Emu*, vol. i., p. 147.) Fourteen months he has been at it now with scarcely a break. I think it constitutes a record. The other birds seem a little inclined to breed, and the Scrub Turkeys are just beginning to lay. I haven't taken one egg this year of any kind. We can reckon the drought is broken—at least for a time.—ERNEST D. BARNARD. 18/12/02.

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TERANG (VICT.) NOTES.—Ibis came into the district about the beginning of April in immense flocks, attracted by the grubs, which were very bad about that time. The birds stayed on till the beginning of December, though in fewer numbers. I saw a few White Ibis on the 23rd of this month feeding about a tea-tree spring. The first Common Snipe was seen here on 1st September. There were very few about this year, owing to the drought. A Painted Snipe was seen nearly a month earlier, but it left before I could get a look at it. A Land Rail was living about the

garden from the beginning of July till the end of October. A flock of Sandpipers appeared on 8th August, but left when the water dried up early in the spring. A pair of Bronze-winged Pigeons came to the plantation (wattle and eucalyptus) in the beginning of April, and stayed on till the middle of October. I heard the first Pallid Cuckoo of the season on 31st August, but saw a Bronze Cuckoo nearly a month earlier. We usually have a large number of Robins through the winter; from the beginning of April till end of August is about the length of their visit. I have seen very few Wood-Swallows this year. The first pair appeared on 10th September.—C. L. DENNIS. Kolora (Vict.), 30/12/02.

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NATIVE COMPANIONS.—In November last, near Echuca, Victoria, I noticed a few flocks of Native Companions (*Antigone australasiana*) travelling westward towards the lakes at the mouth of the Murray River. They were coming in from the lakes further north, where they are to be seen in hundreds in the winter time. The reason so many flocks often travel at the same time is because of the hot weather coming on suddenly, although I have seen some flocks a week behind the leaders. There were very few other Waders about last year, but other birds were as plentiful as ever, despite the drought.—A. J. SIMPSON. Cornalla, N.S.W.

* * *

WOOD-SWALLOWS.—I had no idea till quite recently that the Wood-Swallows were honey-eaters, or perhaps it would be more correct to say eaters of honey. Two of the species (*Artamus personatus* and *A. superciliosus*) have been flocking lately on the baubinia trees, which are just now in full bloom. I watched them quite close, there being no need for the glasses, for in their eagerness to gather their breakfast of honey they crowded round me within 8 feet of my head. They make an animated scene, seven or eight hundred in a tree, continually shifting from flower to flower, at the same time keeping up an incessant twittering and chirping. I wanted some of these birds for examination, so, walking back 40 yards from the tree on which they were flocking, I fired into the middle of them, bringing down one or two, when the mob rose in a cloud, circled round a couple of times, and then settled again in the same tree under which I was. Picking up the fallen birds, I took their descriptions and measurements, and dissected them to find out their sexes. Ovaries in the females contained only very small eggs indeed, while the testes in the males were also very small (this was 13th August). The stomachs of all contained ants, and one had a small beetle.* I have since watched

* Does this not suggest that the birds were capturing insects rather than seeking honey, the insects being attracted by the nectar-laden blossoms?—EDS.

Artamus cinereus honey-eating, but they never, so far as I can see, mob with the two previously mentioned. Gould makes no mention of this habit of the Artami.—FRED L. BERNEY. Richmond (N.Q.), 18/9/02.

* * *

VARIED LORIKEET (*Ptilosclera versicolor*).—I am forwarding a skin of a Lorikeet (female) obtained on the river here, where during the past month it has been numerous, feeding on the honey of the bauhinia blossoms and the river gums. Never saw it on the ground except when down at water. It apparently lives almost entirely on honey. One we caught, and which has taken very kindly to captivity, is reported never to eat seed, but to subsist on sugar and water, with perhaps now and again a small portion of bread soaked in sugar and water. I examined three specimens recently that suicided in a well. They were all females, and, like the one I skinned, contained in their ovaries only very minute eggs. The bird sent fell into the sheep water-trough. I rescued it (only to make a specimen), when it squealed so vigorously that in an instant I was standing in a cloud of the Parrots, which settled on my arms, hands, shoulders, and hat till they weighed down the broad felt brim of the latter, almost to shut out my sight. There must have been two or three dozen on me. It was a wonderfully pretty sight, and I should much have liked to have caught the picture with a camera.—FRED. L. BERNEY. Richmond (N.Q.), 2/11/02.

* * *

FLY LARVÆ IN LIVING SQUABS.*—At Distillery Creek, about three miles from Launceston, a New Holland Honey-eater built in a tea-tree, about 6 feet from the ground. The nest contained three young, a few days old, with small pin feathers in the wings, the body being still bare. On first looking in the nest I thought one of the young birds was deformed. On closer examination this was found to be due to large maggots—one across the front of the bird's head, over the eyes, another on top of its head, several under the skin on its body, and one on its foot; there were also two in the legs, which gave them a very deformed appearance. These maggots were just under the skin, with the larger end out, and when touched would draw themselves in. I removed nine from one bird by pressing near where they were situated, and making them protrude, then passing a pin through them. When removed the wound discharged blood and a watery fluid. Two out of the three birds were affected, yet appeared quite as healthy as the remaining one. On going a few days after, one from which I

* This occurrence is not uncommon among frogs and lizards. The larvæ are deposited by a different species of *Diptera* from the ordinary blow-fly.—EDS.

had removed the maggots was dead, and the larvæ had disappeared from the other, which was doing well. Later in the season we found another nest with the young in a similar state; also that of a Grey-tailed Thickhead, with 11 large maggots in one of the young and four in another. In each case one young bird was free. I had not an opportunity to see if the latter lived, as someone took the nest and young. A friend of mine also found the young in a Goldfinch's (introduced) nest afflicted in like manner. Those he removed the larvæ from died. We have only observed this in one district, and would be glad to know if others have noticed the same thing.—H. C. THOMPSON. Launceston.

* * *

MORE ABOUT MUTTON-BIRDS.—When coming out of Otago Harbour on Sunday, the 26th November, some of these Petrels, in immense numbers, were settled on the water and feeding on what is locally known as "whale-feed"—small shrimp-like creatures about an inch long, and which at times are so numerous as to colour the water for acres brick-red. It was almost calm, and as we drew up to the birds a passage was opened up through them as we passed. It was amusing to watch their efforts to escape—many of them were so filled as to be unable to fly, and attempted to escape by diving and paddling frantically away from the vessel. It was noticed that many, in their efforts to escape, ejected the reddish substance they had been feeding upon. They appeared to extend several miles north and south of Otago Heads. We also noticed birds off Cape Farewell Spit lighthouse, but not in such great numbers as the preceding. After leaving the Bluff we noticed them in Foveaux Strait, and came across large numbers 30 or 40 miles westward of Solander Island. There were also with this last lot a number of Whale-Birds, or Prions.—(CAPT.) WM. WALTER, s.s. *Westralia*.

* * *

WESTERN PORT NOTES.—Real Curlews made their appearance early in August, and were fairly numerous by middle of September. Their numbers were considerably increased during October, and by the end of November they were to be seen all over Western Port Bay, at the spots favoured by them. On 14th September a nice flock of a score of Whimbrel was observed, together with Bar-rumped Godwit, Sooty Oyster-catchers, Pelicans, Sandpipers, &c., on "Bird Rock." Golden Plover, Marsh Tringa, and Greenshank were noticed in October, but in limited numbers as compared with some seasons. Swans were numerous and Ducks scarce; neither nested locally, owing to all swamps being dry or nearly so. A few Snipe made their appearance early in September, but, owing to scarcity of water, were only seen in isolated pairs. I visited the rookery of Pied

Cormorants previously mentioned (*Emu*, vol. ii., p. 32) on 14th and 15th September, and secured nine sets of eggs. The birds had built about 100 nests, many containing one egg only, some two eggs, and again others with three eggs, one nest alone having four eggs. All were fresh. Many of the birds were flying overhead, carrying branches of the mangrove bushes, of which alone the nests were constructed. I secured a typical nest and forwarded to the Museum. The birds seem to roost and rest also upon the nests during construction, as all the structures are very foul, and have the appearance of being white-washed. On our leaving the rookery the birds quickly returned to the nests and took their places upon them. A good many flocks of Straw-necked Ibis were occasionally observed during last winter and early spring—an unusual occurrence, owing probably to the dry condition of the interior. The first Pallid Cuckoo made its appearance on 28th August, being just two days earlier than the previous season (1901). I have always noticed that the first birds of this species arrive from exactly the same quarter—viz., north-east—and fly south-west. On arrival they may be seen on the top of the tallest dead tree, and after giving a few notes fly off to the next tall tree, usually a distance of two to three hundred yards, again piping a few notes and away again, but not deviating from the south-westerly course. This advance bird or birds seem to continue on their course, leaving the later arrivals to locate themselves as they may desire. All our northern visitants, as regards land birds, are much less in evidence than usual. Orioles, Caterpillar-catchers, Kingfishers, &c., all show diminution of numbers, whilst the Wood-Swallows are conspicuous by their absence, only one pair of the White-browed being seen and none of the Masked. In September, 1900, I had occasion to remove a large tree in which a pair of Pardalotes (*P. striatus*) had nested for several seasons. The tree was situated near my house, and the birds were observed hopping upon the picket fencing, apparently in search of a fresh nesting site, soon after the tree had been destroyed. They found a small opening at back of a chimney, and reared one brood. This season they returned to the same place on 15th August, and commenced to build a little later. They reared a brood of four, which left the nest second week in November. They now have a second brood nearly ready to fly (date, 3rd January). I saw a single Spine-tailed Swift on 28th December, but have not noticed any others so far.—GEORGE E. SHEPHERD. Somerville, 3/1/03.

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CENTRAL QUEENSLAND NOTES.—July to 20th August.—At Cairdbeign, in the Springsure district, Sulphur-crested Cockatoos fairly plentiful, and feeding a great deal on the seeds

of the Bathurst burr. Numbers of dead and apparently starved Jackasses. Absence of usual bird life very marked.

22nd August.—Back to Clermont. Great number of Bronze-winged Pigeons being shot round township; forced in long distances by failure of usual watering places. The majority appear to camp the night near water, and drink before leaving in the morning.

26th August.—At Wolfgang head station, about 7.30 p.m., heard smash of crockery in pantry, and found *Podargus* on top shelf. The bird suffered itself to be caught and thrown out. Forgetting that the surroundings did not assimilate, it assumed a rigid attitude, with beak and tail in a straight line, to resemble a piece of dead wood, and was evidently under the impression we could not see it. When seized it did not struggle, and only uttered one feeble "squawk." This was a repetition of a similar performance on the previous evening, but, luckily for the bird, it did not happen a third time to be attracted by the moths round the lamp.

8th September.—Last occasion on which I saw Red-capped Robin.

12th September.—About 250 Ibis visited the well I was camped at near the Peak Range. The flock stopped the night and left early next morning, and were, I think, prospecting for young locusts, which until this drought were bred in millions about the foothills of the range.

15th September.—Five Emus at well, looking very drought-stricken and ragged; living for the most part on the stony fruit of the Emu apple tree.

5th October.—On Clermont township lagoon saw Teal, Shovellers, White-eyed, Black, and Wood Ducks; very tame, as if realizing they were within the bounds of the municipality. Bee-eaters, Fairy Martins, and Wood-Swallows fairly numerous.

15th November.—At Langton, 2 p.m., solitary Swift circled round house several times and departed eastwards. No others noticed or reported.

10th December.—Langton. Got Grallatorial bird on small puddle hole left by thunderstorm; skinned and forwarded for identification.* Three similar birds were reported to me from Clermont on the 9th inst.

14th December.—5.30 p.m. Very large flight of Swifts, travelling west and in a great state of excitement, judging by their rapid movements and constant cries. They made a very interesting sight, with a dense black thundercloud as background, and just as the last of them disappeared the storm burst and gave us a very welcome 46 points of rain. The most noticeable features of the six months have been the almost total disappearance of the Jackasses, which are usually plentiful, and

* Greenshank.—EDS.

the fact that nearly all the birds refrained from nesting. Perhaps now that we have had some thunderstorms the birds will start to build, as the red-flowering bauhinia (Hooker's, I think), various mistletoes, and some eucalypts are in blossom, and fairly alive with Honey-eaters—Friar-Birds, the ubiquitous Miner (Garrulous Honey-eater), and a striped one with flesh-coloured bare patches being the most common. Dwellers in tents, like myself, always know when the Friar-Birds are building, as they have a decided fancy for threads from one's towels and the loose frayed ends of the tent ropes.—T. B. CAMPBELL FORD. Clermont.

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MORTLAKE (VICT.) NOTES.—For some years, until, I think, the last one, a large number of Night Herons made the garden of a Mrs. Stevens their home, and also bred there; but they left, and I have not been able to learn whether they have returned or not. Red-capped Dottrels and some Sandpipers were first noticed by me the 1st or 3rd of August. Wild Turkeys have been in this district the whole of the year, and towards the end have been very numerous, flocks of 10 to 30 not unusual. Owing to the growing scarcity of timber, nests of the following birds have been found in unusual places:—A Raven's in fire furrow, Rosella Parrot's in a rabbit's burrow, and a Red-backed Parrakeet's in bunch of grass; this parrot a few years since was very numerous, and always nested in hollows of trees. On 29th August two Robins were seen in the town. In the second week of November I had a White-browed Wood-Swallow (dead) brought to me, and was told they were very plentiful about 14 miles from here.—H. QUINEY. Mortlake, Victoria, 13/1/03.

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NESTING NOTE ON THE HARRIER (*Circus gouldi*).—An interesting phase in the nesting of this bird lately came under my notice in Tasmania. Last October Mr. R. W. Legge, of Cullenswood, found a nest of this Harrier situated among some rushes growing in swampy land. The nest contained three fresh eggs, and he took one for Col. Legge, his father, leaving the other two. In December following, I paid the nest a visit with Mr. Legge, and we were surprised to find that the female bird had laid another clutch of three eggs, and that two were hatched out. Of the first clutch of three, one was taken, another was addled, and the third hatched out, but when the youngster was about a fortnight old the hen bird had again laid another clutch of three, of which two hatched out, and the other was also close on hatching; consequently, when one of the parent birds was sitting on the second clutch, the feeding of the young one must have devolved on the non-sitting bird. One would naturally have thought that the young one, about a month old, would



.. Nest of Harrier (*Circus gouldi*).

FROM A PHOTO. BY D. LE SOUEF



Nest of Rufous Bristle-Bird (*Sphenura broadbenti*). Found by C. F. Belcher at Apollo Bay, 27/12/02.

FROM A PHOTO. BY G. T. SEELEY.

have eaten his small brothers and sisters, but apparently he didn't; he looked very comical, sitting on the edge of the nest in a defiant attitude (see Plate XII.), and the two little ones in the centre trying to hide one behind the other, and rolling the two eggs about in their efforts to do so. The parent birds must have had a very busy time of it keeping their two broods supplied with food. I subsequently learnt of a second case near Avoca (Victoria), which was almost similar, except that there were no eggs in the nest, only one young one about a month or six weeks old, and three about a week old, which shows that these birds do occasionally rear double clutches. It would be interesting to hear if any other Aust. O.U. members have observed the same thing.—D. LE SOUËF. 12/1/03.

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TOOTH-BILLED BOWER-BIRD.—On the 28th December, 1902, I spent a very pleasant and instructive morning examining the playgrounds of this strange bird. Under the guidance of Mr. A. Elgner, of Kuranda, who is an enthusiastic bird-lover and very close observer, I had the opportunity of inspecting five playgrounds, all within a few miles of Kuranda.

No. 1 was situated in a dense tangle of lawyer cane, and the loud call of the bird was heard long before we reached the locality, but, though we crawled as silently as possible towards our objective, the bird was disturbed by our approach. We lay down within a few feet of the playground, and in a few minutes our friend came back and perched on a twig about 2 feet above the chosen spot. We were then treated to a wonderful display of the bird's powers of mimicry, and by the way in which he stretched and peeped in our direction one judged that he was quite aware that he had an interested audience. The first effort was the whistle of the Rusty Shrike-Thrush, which he imitated really well, though one might notice that though the note was strong it lacked the melody and roundness of the original. Then came the rolling note of the Black Butcher-Bird, a call very much resembling that of the Chough, and which might be an imitation of either or both. After that the scream of the Blue-bellied Lorikeet was reproduced, followed by that of the Spotted Cat-Bird. Although the last-named call was a splendid imitation, it seemed to require a considerable effort to produce it, and was followed by a low after-note, to hear which one had to listen carefully. Perhaps the bird's masterpiece was the call of the Drongo-Shrike, a harsh, grating note. Possibly he gave us that just to prove that his repertoire was a varied one. After watching and listening to the bird for a considerable time, we reluctantly disturbed him, as we wished to closely examine the playground. The cleared space was about 6 or 7 feet long by 4 wide, and was swept as clean as one could do it with a broom. Twenty-five large leaves, all fresh, were placed

irregularly about it, all turned upside down. A careful inspection disclosed five distinct varieties of leaves, samples of which were taken for future reference.

At No. 2 we had no opportunity of watching the bird, as he left at our approach, and seemed reluctant to return to treat us to a sample of his musical abilities. Here the leaves were of a different variety to any of those previously found, being with one or two exceptions those of the native ginger.

No. 3 was a very much more extensive ground, being ten or twelve feet long, but pinched in at the middle like a figure 8. Possibly it was a sort of combination playground, and belonged to two birds, and it might have proved of interest if we had waited for the bird or birds to return. The leaves were all of one kind (native ginger), and were about 20 in number.

Soon after leaving No. 3 a call led us to No. 4, and there we had opportunity of watching the bird again, though at a greater distance. His songs were not so varied, though the quality was good. An examination of his playground disclosed a rather sad state of things. The bird was either a poor housekeeper or had slept late that morning, for the floor was littered with dead leaves of the previous day's gathering, only two or three fresh ones being amongst them.

No. 5 was situated close to a timber-getters' track, and, being in slightly more open scrub, was made the subject of a photo. The leaves were 24 in number, and excepting four or five, were those of the native ginger.

Mr. W. T. White told me of the following interesting trick he played on one of these birds. Finding one of their playgrounds, he removed all the leaves and replaced them with others closely resembling, but of a different variety. Returning a few hours later he found that the bird had thrown out all the leaves he had put there and replaced them with others of his own choosing.—E. M. CORNWALL, Cairns.

From Magazines, &c.

IN *The Zoologist* (November, 1902) Mr. Frank M. Littler, of Launceston, contributes a chatty article on "The Lesser White-backed Magpie (*Gymnorhina hyperleuca*)."
Some of his interesting remarks regarding this species are embodied in another article—"Notes on Some Birds Peculiar to Tasmania"—which will appear in *The Emu* shortly.

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IN the October (1902) number of *The Ibis* Dr. P. L. Sclater contributes an article on "Remarks on two Lately-described Australian Birds," with two beautiful plates. The species

referred to are *Eremiornis carteri* and *Platycercus* (*Barnardius*) *macgillivrayi*, both originally described by Mr. A. J. North, C.M.Z.S., in *Victorian Naturalist* (1900).

* * *

THE *Report on the British Museum (Natural History)* for 1901 states that in the Bird-section the total number of specimens added was 19,743. Those of Australasian interest were:—Collection of birds and eggs from the Antarctic (*Southern Cross*) Expedition, presented by Sir Geo. Newnes; the type of *Eremiornis carteri* from Western Australia, presented by Mr. T. Carter; three birds and six eggs, also from Western Australia, presented by Mr. B. H. Woodward; 220 nests and eggs from Victoria, presented by the Government of Victoria; 124 birds from the New Zealand region, including the type of the *Phalacrocorax ranfurlyi*, presented by the Earl of Ranfurly.

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THE RED-BROWED FINCH, &c.—Under the title “The Australian Waxbill,” which he says is the name given by the Zoological Society, Mr. Reginald Phillipps, Secretary of the Avicultural Society, has contributed to science some further notes on this bird, for the successful breeding of which in Great Britain he has received his society’s medal. A point of interest in his notes in the *Avicultural Magazine* (vol. viii., No. 12, p. 290) is how he prepared a nesting place. “In the centre of the aviary there is a lime tree. Last year, instead of cutting the shoots, I twisted them round and round and in and out, and in the early opening of the year I continued the process, thus forming a really good platform some 3 feet long by nearly 2 broad, on which the birds might comfortably build their nests.” The first nest came to naught, the poor birds being either flooded out or discomfited by cold, and on 19th June the birds were rebuilding in the same tree; but it was not until 31st July that Mr. Phillipps was certain that the young had been reared. He says the immature may “readily be distinguished from adult birds by their black bills, the absence of the red brow-stripe, and their generally duller appearance. They are little dull birds with a tinge of olive above, lighter below, with just a little red in the region of the upper tail-coverts. But they are not uniform in the shade of their body colouring, some being darker than others, presumably a sexual distinction.” On 10th September the three young birds were “all slowly coming into colour.” This confirms Mr. A. J. Campbell’s observations on the same point. A domestic incident is thus related:—“On the 19th of June the male flew on a high, thin perch with a feather nearly as large as himself in his bill. He was at once joined by the female, and pairing, presumably unsuccessful, followed. The pairing was repeated, and the two birds dropped

into the shrubbery and disappeared. From first to last, during the whole time they remained in sight, the male retained the feather in his bill." On 29th August a similar occurrence was observed. In the same number of the magazine cited there is given another instance of a young brood (Gouldian Finches this time) feeding a second and younger brood (p. 303).

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MALURUS CYANEUS.—How this Blue Wren was bred in captivity was described by Mr. R. Phillipps in a preceding number of the *Avicultural Magazine*, and some of his remarks on the habits of the birds, &c., quoted on p. 179 of *The Emu*. Mr. H. Grönvold has since sketched parents and young, and the coloured reproduction is well worth preserving. The pose of the birds is exceedingly good. As the young bird grew it and its mother "were inseparable, hunting, feeding, and cuddling together, for they had been absolutely deserted by the male. . . . Had he a touch of migratory fever, or was the old villain thinking of a certain fair damsel, hitherto referred to in these pages as the spinster aunt, who . . . had suddenly and mysteriously disappeared? Is this, then, the secret of the reputed polygamy of the Blue Wren? Is it his custom, after nesting with one wife, to hand all care of the young brood, when fairly independent, over to her, and himself start afresh with spinster aunt No. 2, and so on until he has reared a brood by all of the three or four spinster aunts, one after the other, in due order and succession?" "They seem to be wholly insectivorous." Some of what Mr. Phillipps has to say *re* their change of plumage is quoted elsewhere. He has been awarded a medal for successfully breeding them for the first time.

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SATIN BOWER-BIRDS.—Some experiences with three pairs of these birds (one of the hens did not live long) are valuable as throwing further light on their habits. One noticeable fact is that the male parent had not assumed his full adult garb when the young were hatched. Mrs. Johnstone, of Bury St. Edmonds, England, says (*Avicultural Magazine*, vol. i., No. 2, new series) she had the birds in a garden aviary wherein were wild rhododendron bushes, from 3 ft. to 10 ft. high, in profusion, and plenty of sticks. A bower was made and frequented by all five birds. The first nest was in a rhododendron bush, about 36 ft. from the bower; this was pulled to pieces and reconstructed. It was only frequented by the one pair of birds, and the male drove all intruders away. On the completion of the nest (7th June) the hen began to sit. She was seen carrying mealworms to the young for the first time on 28th June, "and from that until 29th July, when the young birds left the nest, she was kept busy, as

almost the entire work of bringing them up devolved upon her. She brooded the young very closely at first . . . but she would never feed them when anyone was watching, and would patiently wait with her mouth full of mealworms until the aviary was free from intruders." The young, on emerging from the nest, looked "very like young Thrushes with violet eyes. They were fed all day by their devoted mother, and occasionally moved from bough to bough, but they did not look lively or very happy." They died within a few days.

List of Birds Found at Strathbogie, Victoria.

BY A. W. R. VROLAND, STRATHBOGIE.

THIS district is situated in North-Eastern Victoria, and the country is mostly rugged, mountainous, and timbered. The birds here enumerated will probably give a fair idea of those found all over this wild locality.

Wedge-tailed Eagle	..	..	<i>Uroaëtus audax</i>
Whistling Eagle	..	..	<i>Haliastur sphenurus</i>
Goshawk	..	..	<i>Astur approximans</i>
Brown Hawk	..	..	<i>Hieracidea orientalis</i>
Black-cheeked Falcon	..	..	<i>Falco melanogenys</i>
Nankeen Kestrel	..	..	<i>Cerchneis cenchroides</i>
Boobook Owl	..	..	<i>Ninox boobook</i>
Raven	..	..	<i>Corone australis</i>
Grey Crow-Shrike	..	..	<i>Strepera cuneicaudata</i>
White-winged Chough	..	..	<i>Corcorax melanorhamphus</i>
Magpie Lark	..	..	<i>Grallina picata</i>
Grey Shrike-Thrush	..	..	<i>Collyriocincla harmonica</i>
Oriole	..	..	<i>Oriolus viridis</i>
Scarlet-breasted Robin	..	..	<i>Petræca leggii</i> (all the year)
Flame-breasted Robin	..	..	<i>Petræca phænicea</i> (April to Sept.)
Red-capped Robin	..	..	<i>Petræca goodenovi</i> (rare)
Blue Wren	..	..	<i>Malurus cyaneus</i>
White-shafted Fantail	..	..	<i>Rhipidura albiscapa</i>
Black and White Fantail	..	..	<i>Rhipidura tricolor</i>
Ground-Thrush	..	..	<i>Geocichla lunulata</i>
Satin Bower-Bird	..	..	<i>Ptilonorhynchus violaceus</i>
Striated Field-Wren	..	..	<i>Calamanthus fuliginosus</i>
Brown Tit	..	..	<i>Acanthiza pusilla</i>
Striated Tit	..	..	<i>Acanthiza lineata</i>
Yellow-rumped Tit	..	..	<i>Acanthiza chrysorrhoa</i>
Buff-rumped Tit	..	..	<i>Acanthiza reguloides</i>
White-browed Scrub-Wren	..	..	<i>Sericornis frontalis</i> (?)
Black-faced Cuckoo-Shrike	..	..	<i>Graucalus melanops</i>
White-fronted Chat	..	..	<i>Ephthianura albifrons</i>
Black-backed Magpie	..	..	<i>Gymnorhina tibicen</i>
Butcher-Bird	..	..	<i>Cracticus destructor</i>
Yellow-breasted Shrike-Robin	..	..	<i>Eopsaltria australis</i> (only in spring)
White-throated Thickhead	..	..	<i>Pachycephala gutturalis</i> (rare)
White-throated Tree-Creeper	..	..	<i>Climacteris leucophæa</i>

Brown Tree-Creeper	<i>Climacteris scandens</i>
Orange-winged Tree-Runner ..	<i>Sittella chrysoptera</i>
White-eye	<i>Zosterops carulescens</i>
White-eared Honey-eater ..	<i>Ptilotis leucotis</i>
Yellow-faced Honey-eater ..	<i>Ptilotis chrysops</i>
Noisy Minah	<i>Manorhina garrula</i> (very rare)
Yellow Wattle-Bird .. .	<i>Acanthopneuste carunculata</i>
Friar-Bird	<i>Philemon corniculatus</i>
Blue-faced Honey-eater ..	<i>Entomyza cyanotis</i>
Red-tipped Pardalote ..	<i>Pardalotus ornatus</i>
Spotted Pardalote ..	<i>Pardalotus punctatus</i>
Yellow-tipped Pardalote ..	<i>Pardalotus affinis</i>
Swallow	<i>Hirundo neoxena</i>
Fairy Martin	<i>Petrochelidon ariel</i> (rare, no nests)
Ground-Lark	<i>Anthus australis</i>
Wood-Swallow	<i>Artamus sordidus</i>
White-browed Wood-Swallow ..	<i>Artamus leucorhynchus</i> (a rare visitor)
Fire-tailed Finch ..	<i>Zonæginthus bellus</i>
Red-browed Finch ..	<i>Egintha temporalis</i>
White-rumped Swift ..	<i>Micropus pacificus</i> (4th March)
Tawny Frogmouth ..	<i>Podargus strigoides</i>
Owlet Nightjar ..	<i>Egotheles novæ-hollandiæ</i>
Pallid Cuckoo	<i>Cuculus pallidus</i>
Bronze Cuckoo	<i>Chalcococcyx plagiator</i>
Little Lorikeet	<i>Glossopsittacus pusillus</i>
Musk Lorikeet	<i>Glossopsittacus concinnus</i>
Black Cockatoo	<i>Calyptorhynchus funereus</i>
Glossy Cockatoo	<i>Calyptorhynchus viridis</i>
Gang-Gang Cockatoo ..	<i>Callocephalon galeatum</i>
White Cockatoo	<i>Cacatua galerita</i>
Crimson Parrakeet ..	<i>Platycercus elegans</i>
Rosella Parrakeet ..	<i>Platycercus eximius</i>
Bronze-wing Pigeon ..	<i>Phaps chalcoptera</i>
Brown Quail	<i>Synæcus australis</i> (rare)
Brown Kingfisher ..	<i>Dacelo gigas</i>
Sacred Kingfisher ..	<i>Halcyon sanctus</i>
Stone Plover	<i>Burhinus grallarius</i>
Spur-winged Plover ..	<i>Lobivanellus lobatus</i>
Snipe	<i>Gallinago australis</i> (rare)
Straw-necked Ibis ..	<i>Carphibis spinicollis</i>
Black Cormorant	<i>Phalacrocorax carbo</i> (rare)
Black Duck	<i>Anas superciliosa</i> (rare)
White-necked Heron ..	<i>Notophox pacifica</i>
White-fronted Heron ..	<i>Notophox novæ-hollandiæ</i> .

Protection of Game in America.

IN CANADA—"No bird or animal (hereafter mentioned) may be hunted, shot, or captured on a SUNDAY."

IN UNITED STATES—"Every LORD'S DAY shall be close season. Whoever hunts or destroys birds or game of any kind on THIS DAY shall be liable to the penalties imposed for violation of the law in other close seasons in addition to those for shooting on the LORD'S DAY."

Review.

CATALOGUE OF BIRDS' EGGS.

["Catalogue of the Collection of Birds' Eggs in the British Museum (Natural History). Vol. ii.—Carinatæ (Charadriiformes—Strigiformes)."] By Eugene W. Oates. London: Printed by order of the Trustees, 1902. 8vo, pp. i.-xx., 1-400.)

IN the second volume of this valuable work of reference, which is now available, the high standard of work which was noticed in *The Emu* (vol. ii., pp. 38-41) in connection with the first volume has been maintained. With such resources as the Trustees of the British Museum have at command, nothing less was to be expected. In the second volume Mr. Oates has continued his conscientious labours by describing in 342 pages the eggs of Plovers, Cranes, Ibises, Ducks and Geese, the Cormorant family, Hawks, Owls, &c., in all 726 species, of which number about 110 are Australian, one being described for the first time, namely, *Notophox flavirostris* (Sharpe), or the Pied Egret of Gould. The egg was from the Gould Collection, and bore the data, "North Australia." Embodied in the volume are an appendix of 36 pages and 15 coloured plates (Mr. H. Grönvold and Messrs. Pawson and Brailsford, artist and lithographers respectively). These plates include figures of the eggs of the following Australian species, namely:—*Ægialitis cucullata* (Hooded Dottrel), *Ochthodromus geoffroyi* (Large Sand-Dottrel), *Peltolyas australis* (Dottrel), *Notophox novæ-hollandiæ* (White-fronted Heron), *Phaëton æthereus* (Tropic-Bird), *Astur cruentus* (Lesser Goshawk), *Astur approximans* (Goshawk), *Elanus scriptus* (Letter-winged Kite). Where the whole work is so excellent, it is hard to pick a fault. One point in connection with the coloured plates is worth mention, however. If the egg figured as that of the Australian Dottrel belongs to that species at all—which is doubtful—it certainly is not a typical specimen. The information given as to its place of collection must surely be wrong also—"Victoria, Australia—Gould Coll." can hardly refer to a bird which has not been known to breed so far south. If the egg really formed part of the Gould Collection, is it possible that, during the time that collector visited these parts some exceptional season induced these Dottrels to depart from their usual habits?

The Coloured Plate.

WITH this issue the Council of the Aust. O.U. has pleasure in being able to furnish, thanks chiefly to the donors of the "Coloured Figure Fund," the first coloured plate (No. X.), depicting three beautiful and rare Wrens (*Maluri*), namely:—*M. elizabethæ* (Campbell),* *M. whitei* (Campbell),† and *M.*

* *Ibis*, p. 10 (1901).

† *Emu*, vol. i., p. 65 (1902).

assimilis (North).* Members cannot fail to appreciate the pretty poses and realistic colouration of the birds by Mr. H. Grönvold and Messrs. Mintern Bros., artist and printers respectively. The best thanks of the Union are also due to our member, Mr. D. Seth-Smith, F.Z.S., who most enthusiastically undertook the supervision of the production of the plate in London, and from whom the following interesting note has been received:—"I showed the skins to Dr. Bowdler Sharpe the other day, and we compared them with those in the National Collection. He considers *M. elizabethæ* and *M. whitei* to be good species, but cannot see where *M. assimilis* differs from *M. lamberti*."

In justice to Mr. North, it may be mentioned that it is quite possible that Dr. Sharpe's reference may have been a skin of the inland or western form of *lamberti*, which it is contended is *assimilis*, differing in shade of colouring from the true *lamberti* from the eastern coast.

Coloured Figure Fund.—Donations, &c.

PROCEEDS of public lecture on "Islands of Bass Strait," £10; Mr. T. Carter (W.A.), 10s.; Miss M. Brumby (Tasmania), 5s.; Mr. Tindall (Vict.), 5s.; Mr. T. B. Campbell Ford (Queensland), 5s.; Col. Legge (Tasmania), 5s.; Mr. Geo. Graham (Vict.), 5s.

About Members.

MR. Tom Carter, having relinquished pastoral interests at Point Cloates, Western Australia, is returning to England. After a residence of 13 years in the region of the North-West Cape, Mr. Carter's field notes, which he is now systematically writing up for *The Emu*, should be extremely valuable.

Mr. Robert Hall has been elected a Corresponding Member of the Zoological Society (London). Mr. Hall left on the 3rd February for an extended trip to the northern hemisphere. Probably the most important part of his work will be in Eastern Siberia, where some interesting notes on migratory Australian birds may be gleaned. He proposes journeying to Europe by the Siberian Transcontinental Railway. Mr. Hall's companion will be Mr. R. E. Trebilcock, of Geelong.

At the Twentieth Congress of the American Ornithologists' Union held in Washington, D.C., 17th–20th November last, Mr. A. J. Campbell was elected a Corresponding Fellow of that Union. Mr. A. J. North was similarly elected. The other Australians

* *Vict. Nat.*, vol. xviii., p. 29 (1901).

upon whom this distinction had been previously conferred are Sir Walter Buller, Colonel Legge, and Dr. E. P. Ramsay.

Some ornithologists, unlike prophets, have honour in their own country. The following lines to Mr. A. W. Milligan appeared in a Western Australian journal :—

SONNET : DEDICATED TO THE AUTHOR OF AN ARTICLE ON WESTERN AUSTRALIAN BIRDS IN THE GOVERNMENT YEAR-BOOK.

Have I, then, in this fair land dwelt so long,
Yet knew so little of its free domain,
Of those bright fairy-dwellers whose refrain
Fills the eternal woods with mirth and song ?
Was I blindfolded like the piteous throng
Whose souls are poisoned by the love of gain,
Oblivious of the joys that give no pain,
And of the pleasures that inflict no wrong ?
Thou, one of that small, solitary band,
To whom the secrets that in Nature dwell
Yield knowledge, and the beauties of each land
Are a fresh revelation to dispel
Our darkness, in this prospect newly scanned
Hast shown a glimpse of Eden's long-lost spell !

ARGONAUT.

List of New Members of the Australasian Ornithologists' Union.

(For original list see *Emu*, vol. i., pp. 157-160.)

- BRADLY, J. F., Customs House, Melbourne.
BAYLISS, MISS, Meadstone, Avoca, Tasmania.
BUTLER, A. L., Murray-street, Hobart, Tasmania.
BRYANT, DR. H. W., Williamstown, Victoria.
CLELAND, DR. J. B., Parkside, Adelaide, S.A.
CROSSMAN, ALAN F., Fremantle, W.A.
CLOUSTON, T. H., Derby, Tasmania.
DENNIS, G. L., Eceyuk, Kolora, Victoria.
HARRISON, M. W., Newtown, Tasmania.
HOPE, DR. W. W., Colac, Victoria.
HUTCHINSON, FRANK, jun., Napier, N.Z.
LEVERKÜHN, DR. PAUL, C.M.Z.S., &c., Bulgaria, Europe.
MELLOR, MRS. J., Holmfirth, Fulham, S.A.
MORGAN, DR. A. M., Angas-street, Adelaide, S.A.
M'GOWAN, WM., City Park, Launceston, Tasmania.
OBERHOLSEN, H. C., Department Agriculture, Washington, U.S.A.
RYAN, CECIL, Bradshaw's Creek, Tasmania.
STEPHEN, W. J., Robinson's-road, Auburn, Victoria.
SMEDLEY, J. H., Townsville, Queensland.
SMITH, D. SETH, F.Z.S., Addiscombe, Surrey, England.
THOMPSON, H. C., Frederick-street, Launceston, Tasmania.
THOMSON, MRS. J. R. M., St. Ronans, Essendon, Victoria.
TAIT, C. F., Albert-road, Albert Park, Victoria.
WHITNEY, H. H., Victoria-street, Williamstown, Victoria.
WEINDORFER, G., Austro-Hungarian Consulate, Melbourne, Victoria.
WACE, R. H., The Residency, Onslow, W.A.

Articles and Notes to Appear.

THE Cormorants of New Zealand (Capt. F. W. Hutton); Notes on a Trip to the Stirling Ranges, and Notes on Lake Yanchep (A. W. Milligan); South-Western Notes (T. Carter); Notes on Migration of Birds (P. Cochrane); Tawong Notes (James Wilson); The Black Butcher-Bird, and Visit to Oyster Cay (E. M. Cornwall); Fitzroy River Birds, and Plumage Phases of *Ptilotis leucotis* (Robert Hall); Clarke Island Notes (J. D. MacLaine); Brown's River Road Notes (J. M'Clymont); Birds Peculiar to Tasmania (F. M. Littler).

Notes.

BALLARAT.—A large flock of wild Pelicans has taken up quarters at Lake Wendouree, and is playing great havoc with perch and other fish. The birds have evidently migrated from one of the drought-stricken districts. Permits to shoot the unwelcome visitors have been applied for by several local sportsmen.—*Argus*, February, 1903.

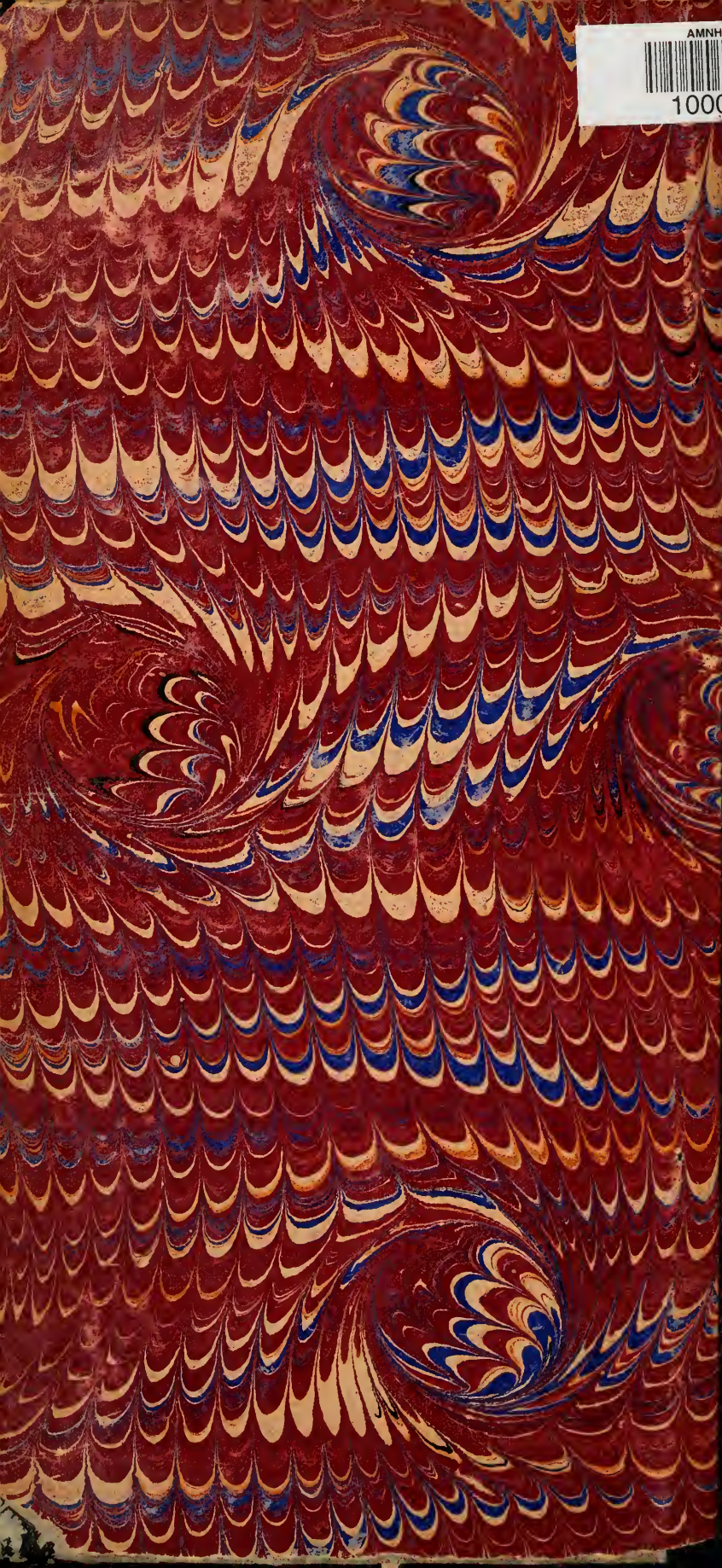
TIMMERING.—The terrific "brick-fielder" which swept the district last week almost destroyed the large army of Native Companions that had proved so troublesome on the Parkes Plain farms. The birds used to retire to roost every night at a swamp on Messrs. Gibson Bros.' run at Top Creek, and the morning after the storm over 60 of them were found with their wings and legs mangled through the violence of the wind.—*Age*, 21/11/02.

RE THE A.A.A.S. VERNACULAR LIST mentioned in the last issue (page 184) of *The Emu*, the scientific nomenclature on pages 25 and 26 has been amended in accordance with the Brit. Mus. Cat. Birds, vol. xxvi. Members who possess the List may have the amendment slip on application to the hon. sec. Aust. O.U.

NOTICE.—*Will members please note that this part (4) concludes Vol. II., and that the usual handsome uniform cases may be had on applying to Messrs. George Robertson and Co. Proprietary Ltd., 384-390 Little Collins-street, Melbourne. Price (including binding the volume), 2s. 6d. each.*

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